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GEOGRAPHICAL AND ETHNOGRAPHICAL

ELUCIDATIONS

TO THE DISCOVERIES OF

AERTEN GERRITS VRIES

Commander of the fleet Castricum

A. D. 1643.

IN THE EAST AND NORTH OF JAPAN;

TO SERVE AS

A MARINER'S GUIDE IN THE NAVIGATION

OF THE EAST COAST OF JAPAN, AND TO JEZO, KRAPPO, AND THE KURILS.

BY

P. F. VON SIEBOLD.

TRANSLATED FROM THE DUTCH

BY

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Interpreter to the British Consulate General in Japan.

WITH A REDUCED CHART OF VRIES' OBSERVATIONS.

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GEOGRAPHICAL AND ETHNOGRAPHICAL

ELUCIDATIONS

TO THE DISCOVERIES OF

MAERTEN GERRITSEN VRIES.

.....

In introducing the present work to the notice of the British Public, I feel myself compelled to state what induced me to undertake the task, and made me suppose it would be favorably received.

Amongst a number of manuscripts entrusted to the care and examination of Mr. Fred. Muller, our well known bibliophile and publisher, by Mr. Huydecooper van Maarseveen at Amsterdam, the former, to his great delight, discovered the original log of M. G. Vries' voyage along the coasts of Japan; a voyage so celebrated in the annals of maritime discovery, that the loss of its account was deeply lamented by La Pérouse, as well as by other navigators.

No sooner was the treasure discovered, than it was entrusted to the care of Captain P. A. Leupe of the Marines, by whom it was enriched with various annotations, and was published by the Royal literary and philological Institute of Netherlands' India at Delft.

Our great Japanese Savant, Professor Von Siebold, at present sent out on a mission to Japan, having been informed of the precious discovery of the long missing ma-

manuscript, immediately offered his services to our publisher, in rendering it applicable to the demand of the present day. To this undertaking Prof. Von Siebold is most eminently fitted by his profound acquirements in natural history and philology, the results of which he has communicated in the following pages, that have thereby acquired a value scarcely to be equalled by any other recent work on the Japanese empire; added to which, the astonishing accuracy of Vries' observations concerning the soundings and navigation of those seas, the minute correctness of which, is now fully ascertained, justifies the statement, that no other work of this century spreads so much light over Japan and its coasts as the present.

The importance of the information contained in this valuable work of Prof. Von Siebold's, inspired the publisher with the desire of introducing it to the notice of the British Public, and though the same motive would have been sufficient to induce me to comply with his request, I was the more willing to do so, as it afforded me an opportunity of testifying the esteem and friendship I feel for him, as well as of anticipating upon my functions of

Interpreter to the British Consulate General in Japan,

F. M. COWAN.

Amsterdam, 7th March 1859.

The Council of the *Royal Institute for the Language Geography and Ethnology of Dutch India*, confided to me the no less honourable than agreeable task of elucidating, by proper geographical and ethnological remarks, the "Journal" kept during M. G. Vries's voyage of discovery to the east and north of Japan. If I have already succeeded in tracing the obscure footsteps of the famous Dutch navigator in that extensive region of the Pacific Ocean, and pointing them out in my "*Geschiedenis der ontdekkingen in het zeegebied van Japan*", I hope that now, while his lately discovered "Journal" lies open before me, I shall be able to follow them with more certainty, and, after the lapse of full two centuries, confirm his discoveries and the claims of the old Dutch naval glory.

This voyage, one of the most important undertaken during the 17th century, is sufficiently explained, in an historical point of view, in the Introduction and the Instructions which precede the Log. My elucidations will therefore be confined — 1st to a careful indication of the course taken by Vries, from the island of *Breskens* in the Japan seas, along the east coast of *Nippon* to and along *Jezo*, discovered by him; 2nd to

a comparative examination and confirmation of this navigator's observations and discoveries, from the point of view of our knowledge of those regions, and 3rd to a review of the results this voyage has had for hydrography, the natural history of the sea and for ethnology.

In order however to give to that appendix to the Log a more general utility and practical tendency, especially since the opening of a new port at *Hakotade*, to the north of the Nippon empire, I have so arranged my observations that they may serve as a mariner's guide for the navigation of the east coast of Japan and to *Jezo*, *Krafto* and the *Kuriles*, a work which has become of paramount necessity.

It is to the political influence of Netherland in Japan that the world is indebted for a more general freedom of commerce to that land; may therefore the observations and discoveries of the old Dutch navigators be the foundation of a guide along coasts as yet nearly unknown.

VON SIEBOLD.

Note. The originary Journal, as also the Instructions here mentioned, was discovered by Messrs. F. Muller and Captain P. A. Leupe and published with the annotations of the latter gentleman * We here only offer the remarks and observations, they being of most importance to the navigators of our country, the persons for whose benefit these pages are principally intended.

* *Reize van MAARTEN GERRITS VRIES in 1643 naar het noorden en oosten van Japan, volgens het Journaal gehouden door C. J. Coen, op het schip *Castricum*, naar het handschrift uitgegeven en met belangrijke bijlagen vermeerderd door P. A. LEUPE, Kapitein der Mariniers. Amsterdam, bij Frederik Muller, 1838 in 8vo.*

I. *Discovery of the Island of Breskens and of Quast's Islands.*

Commodore Vries had called a council of the flute *Castricum* and of the yacht *Breskens*, on the 29th April, at 16° 50' N. Lat. and 149° 38½' East of Teneriffe (128° 18' 6" East of Greenwich) and determined, should wind and weather permit, to continue his course N. E. to 24° N. Lat. and to the longitude of the east coast of Japan (then fixed by the observations of Mathys Quast and Abel Tasman, August 24th 1630, at 31° 40' East of *Pulo Timoan*, (135° 55' East of Greenwich). On the 7th of May they found themselves at 24° 4' N. Lat. and 150° 56' 30" East of Teneriffe. Small rockmews, foam, floating seaweed and a piece of wood were so many signs of land, which however was not yet visible. The next morning (May 8th) after sunrise they discovered to the W. N ¼ N., within a distance of four German miles, a small low island, about a mile and a half long. According to the observation taken at noon, the island lay at 24° 43' N. Lat. and 151° 31½' East from Teneriffe (130° 11' 6" from Greenwich). As at this latitude no other island than that of Malabrigo was to be found on the Company's charts, * and as that lay, by computation, 21 miles to the west, they considered the one before them

* *Twee caerten van gedaene coursen der Comm. Quast, tot ontdekkingh van 't Gondrijcke eyland.*

as unknown, and because the Breskens had first discovered it, they named it *Breskens Island*.

On the charts of that period we only find *three islands* between 25° and 27° North. Latitude and within a longitude of about 70 German miles. The most southern and westerly of these bears the name of *Amsterdam*, the north-eastern (properly a group of five small islands) that of *Ihlas dos Hermanos*, and the third, at 26° N. Lat., 17 miles to the S. W. of the *Ihlas dos Hermanos*, that of *Malabrigo*.

The two last named islands, which are both given on Abraham Ortelius's "Theatrum orbis terrarum", published in 1570, and of which Malabrigo was seen in 1543 by Bernardo de Torres, are certainly the *Hooge Meeuwen Island*, the *Engels* and *Grachts Islands* discovered by Quast and Tasman in 1639* and named Quast's Islands † on the above quoted *Caerten*

* *Journal ofte dachregister van den Ed. Commandeur Mathijs Quast M. S. 1639.* VON SIEBOLD'S *Geschichte der Entdeckungen im Seegebiete von Japan.* Leyden 1853.

† This chain of islands, stretching from 26° 38' to 27° 45' N. Lat. and from 142° to 142° 14' East Long. from Greenwich, has been frequently found in later times, and is given under the names of *Islas del Arzobispo* (1734), *Margaret's islands* (1773), *Mendizabal*, *Desconosida*, *Guadalupe* etc., and marked at widely differing longitudes on the maps of the 18th century, though no-where geographically described. They were also accidentally discovered by the Japanese as early as 1675, and called *Manin-sima*, i. e. islands without men, and afterwards, after their discoverer, *Ogasawa-sima*. In 1785 a Japanese geographer, FAJASI SIVEI, described and mapped them in his work entitled "*San-kok-tsu-ran-dsu-ki*" ("description of three kingdoms."). That work, and a Dutch translation, was brought over to Holland by the learned Isaac Titsingh, Chief of the Dutch trade in Japan in the years 1780—1785. After his death (at Paris in 1812) it fell into the hands of Abel Remusat and afterwards into those of Julius Klaproth.

van gedaene Courseu. The first, indisputably discovered by Netherlanders and by degrees disappearing from the the maps, was re-discovered by a Russian officer, Lieut. Ponafidin, in 1820, at 25° 50' N. Lat. and 131° 12' E. Long., and called *Porolino's Islands*, after his ship and because there are two. They are doubtless the same which Captain Forbes sailed past with the brig Nile, in August 1825, and of which the most southerly was found to be at 25° 42' N. Lat., 131° 13' E. Long., and the most northerly at 25° 53' N. Lat., 131° 17' E. Long. These islands were lately visited by Commodore Perry,

By these illegal heirs of Titsingh's literary remains therefore the description of the so called "*Isles Bonin ou inhabitées*" was published in 1818, again drew the attention of navigators to them, and led as it were to their re-discovery by the English Captain Beechey (June 1827) and by the Russian Capt. Lutke (May 1828). Now, since the 22nd Aug. 1853, there has been a colony, mostly of Americans, on the largest of the Bonins, ("*Peel Island*", which was taken possession of for England by Beechey) calling themselves *the colony of Peel Island*. The southern group of these islands, named by Beechey *Baily Group*, was visited and taken possession of in October 1853 by the American Capt. Kelly for the United States of North America, and named *Coffin's Islands* after the Captain of the American whaler *Transit*, which accidentally anchored there in 1823. Commodore Perry, who visited the Bonin islands in 1853, saw very rightly that for whalers as well as for the steam-mail-packets from *California to China* and later to *Japan*, these islands would soon become one of the most important stations in the North Pacific Ocean. England has thus shared the possession of the *Quast's Islands* with America, whilst the honour of the discovery belongs to our old Dutch navigators, and the merit of the first geographical knowledge of them to the literary researches of our Netherland literati. As early as 1824 the writer of the present sheets called the attention of the Dutch Indian Government to this important group, where the Japan government, for they belong to the Japanese empire, would rather see the Dutch flag wave than any other.

and the situation of the largest and most northern fixed at $25^{\circ} 47'$ N. Lat. and $131^{\circ} 19'$ E. Long.

The Island of *Breskens* might justly be regarded as a new discovery; yet as Vries's Log was lost, it was nowhere mentioned. In the beginning of this century however its existence was several times confirmed. In 1807 the French frigate *La Canonnière* discovered an island at $24^{\circ} 30'$ N. Lat. and $130^{\circ} 18' 30''$ E. Long., and in 1815 the Spanish frigate *Magellan* also discovered a small low island covered with bushes, at $24^{\circ} 26' 40''$ and $131^{\circ} 03' 46''$, and named it *Isla Rasa*. These two islands are doubtless one and the same *, of which the average latitude would be $24^{\circ} 28' 20''$ N. and the average longitude $130^{\circ} 41' 8''$ East. If we consider at the same time the strong easterly current of the sea in those parts, ranging to from 35' to 40' and even more in 24 hours, the imperfect means for finding and calculating the longitude during the 17th cent., and the remark that the latitude as given by Vries is always some minutes too high, we may confidently mark *Breskens Island* on the charts of the Pacific Ocean as a Dutch discovery, and this with the more justice, as on the newest charts the island of *Rasa* is still given as doubtful (*pointe dubieuse*) and *Kendrick's Island* is never more marked.

* VON KRUSENSTERN is also of opinion that a small island about four miles long, seen by Capt. Kendrick at $24^{\circ} 35'$ N. Lat. and 134° , and marked in Arrowsmith's map as *Kendrick Island*, is *Rasa*.

II. *Discovery of Tasman's Islands.*

On the home passage of Mathijs Quast and Abel Tasman in 1639 from the voyage for the discovery of the *Gold and Silver islands* (*Gout- en Silverrycke eylanden*), situated to the east of Japan, the coast of Japan was made on the 2nd of December, at 34° 54' N. Lat. This land, which they mistook for the islands given in the old Portuguese charts to the W. of the S. E. point of *Nippon*, is in reality the S. E. point of the great island of Japan, *Cape Sirofama* or as it is named on the old Portuguese charts, *Cabo de Bosho*. From here they held a S. S. W. course, along which they discovered several small islands, determining their position as exactly as they could, and preparing excellent drawings to present to their government. To this chain of islands I have given the name of *Tasman's Islands*.*

One of these islands, which appeared as very high land (*heel hooch lant*), was seen from the *Castricum* at a short distance, on the 19th of May 1643, and by stress of wind and stream that vessel was soon after obliged to anchor at the N. W. point. This island, to which Vries gave the name of *Het Ongeluckich eylant*, is called *Fatsi sjó* by the Japanese, and according to the observations of the court-astronomer *Sakusajemon* at *Jedo*, lies at 33° 6' 30" N. and 3° 50' 30" E. of *Mijako*, (139° 30' 30" E. of Greenwich). Capt. Broughton, who visited these islands in 1796, fixed the

* VON SIEBOLD'S *Geschichte der Entdeckungen*, p. 8.

position of *Fatsi sjó* at $30^{\circ} 6'$ N. and 140° E. On the original chart of his voyage it lies at $33^{\circ} 4'$ N. and $140^{\circ} 7'$ E. The N. W. point where Vries anchored is, as he calculates, at a latitude of $33^{\circ} 22'$ and $158^{\circ} 51\frac{1}{2}'$ Long. East of Teneriffe ($137^{\circ} 30' 6''$ E. of Gr.) We have already remarked that the difference in the longitude of the islands we find on the charts of the 17th and 18th centuries, between 24° and 28° N. Lat., is attributable to an eastward current and, as we have seen, this difference sometimes amounts to twelve degrees. In comparison with this therefore, the difference between Vries's longitude and that of the court-astronomer (which I prefer to Broughton's which is 2° more easterly), is insignificant when we consider that the stream between *Fatsi sjó* and the S. E. coast of *Nippon* was for three successive days observed by the American expedition to be $72'$, $74'$ and $78'$ within 24 hours.

The description given in the Journal of the *Unlucky island*, agrees with the sketch made by Quast and Tasman, and is therefore the only description of that island we as yet know. The words "*the Unlucky island was very high land, appearing with two high round mountains, between which was a large valley*", are illustrated by Quast and Tasman on their chart, and at the same time explain the name of an island nearly at this point in a map of de l'Isle's, "*Montagne avec deux pics*" * These peaks are also to be found on an original Japanese map by *Fatsi sjó*; the highest is *Aka fusi jama*, i. e. the Red Fusi mountain

* *Carte de l'Asie, par J. de l'Isle, à Amsterdam, chez Covens & Mortier.*

(opposite the celebrated volcano *Fusi*, which is covered with snow the greater part of the year—and is therefore white). The position and form also of the small "*high round island*", 1 to 1½ mile W. from the N. W. point of the *Unlucky island*, called *Kosima* (i. e. little island) by the Japanese, and marked by Vries "*ronde holm*", is very accurately given, while the observation that, "*between here the stream runs with a stiff current round the N. W.*", is of the first importance for a knowledge of the Japanese stream *Kuro siwo* or *Kuro gawa*, i. e. black sea-stream. Of this current, which I have given on my map of Japan,* from an original Japanese map, it is said that between *Fatsi sjó* and *Mikura* (*Prince-eyland* of Vries) it is about three miles broad, and in spring and winter dangerous for navigation. This stream has been more closely examined, mapped and described by the American expedition †. Vries's remark: "*saegen veel steencroos drijven*", confirms the observation that the Japan stream, like the gulfstream in the Atlantic, is distinguished by banks of a peculiar sort of sea-weed.

The high island seen by Vries on the morning of the 20th May to the south of *Unlucky island*, called by him *Snyder eylandt*, and by the Japanese *Awo sima* (i. e. Green island), was discovered by Quast and Tasman (Nov. 3rd 1639), its position determined, from

* VON SIEBOLD, *Atlas von Land- und Seekarten vom Japanischen Reiche*. No. 1.

† *Narrative of the expedition of an American Squadron in the China Seas and Japan, performed in the years 1852—54, under the command of Commodore M. C. Perry, by Francis L. Hawks*. New-York, 1856. *The Kuro siwo, or Japan stream*, p. 601.

6 to 7 miles S. by W. of *Unlucky island*, at $32^{\circ} 33'$ N. Lat., and a drawing made of it.

On coming to anchor in the evening of the 20th May at a latitude, by calculation, of $33^{\circ} 52'$ and $159^{\circ} 22'$ Long. East of Tener., (according to our correction with $+ 2^{\circ}$, at $140^{\circ} 0' 36''$ E. of Gr.), two other islands were seen from the *Castricum* W. by W., at a distance of 11 or 12 German miles. These are,—the island of *Mikura*, called by Vries *Prince eylandt*, and that of *Myake*, according to the Log *Barnevell's* and on his chart, *Brandend eylandt*, because there was a smoking mountain seen on it.

These two islands were calculated to lie at latitude $34^{\circ} 1'$ and longitude $158^{\circ} 28'$ (according to our correction $139^{\circ} 7' 36''$ E. of Gr.); a calculation which tolerably well agrees with the observations of the court-astronomer and with the map of Broughton. From here, as I shall afterwards show, Vries continued his course along the N. E. and E. coast of Japan, the first hydrographic knowledge of which we owe to him.

On his voyage back, the *Tasman's Islands* were again visited by Vries, and their geographical position more exactly determined. The 28th October he was at $33^{\circ} 58'$ N. Lat. and $160^{\circ} 25'$ E. of Ten. ($138^{\circ} 34' 36''$ E. of Gr.), where *Prince island* W. six miles, and *Barnevell's island* W. N. W. six miles were observed. According to this observation, the former lies at $33^{\circ} 58'$ and the second at $33^{\circ} 6'$ N. Lat., which only offers a difference of some minutes between those of the court-astronomer and of Broughton, while the longitude of *Mikura* (*Prince Island*), as taken on the roads of *Falzi sjó* on the 29 October ($159^{\circ} 56'$ E.

of Tener. or $138^{\circ} 34' 36''$ E. of Gr.), being $55' 54''$ less than that of the court-astronomer, may be fixed at $139^{\circ} 36' 30''$ E. of Gr., if we correct by $+ 55' 54''$; — and this agrees pretty nearly with the geographical position given to it on the small chart of Commodore Perry's voyage.*

Vries directed his course to *Barnevelt's Island* on the 28th October, sailed between that island and *Prince Island* and determined the relative position of the *Tasman's* group by repeated observations. On my corrected map of Japan (Atlas N^o. 1) I have called this passage first undertaken by a European ship, *Castricum Straits*, and the "number of high pointed cliffs which appear as so many high towers", 1 mile by W. $\frac{1}{2}$ N. (from *Barnevelt's Island*), *Coen's Cliffs*, after the worthy mate of the vessel. Broughton, who in 1796 followed the same course as Vries had taken, also saw and described these cliffs: "Off the West point of Volcano Isle are some detached black rocks at two or three miles distance" †, and marked them on his map. On the map of Japan N^o. 2347, published by the Admiralty in London 1855-56, these cliffs are called "*Black Rocks*" This navigator has also discovered an other group of rocks more to the south-west than *Coen's Cliffs*, called by the Japanese *Inaniwa* and by

* *Map of the Japan Islands copied from VON SIEBOLD'S with slight additions and corrections by the U. S. Japan Expedition and other authorities, compiled by order of Commodore M. C. Perry, by Lieuts W. L. Maury and Silas. Bent. 1855.*

† *A voyage of discovery to the North Pacific Ocean, performed in H. M. sloop Providence and her tender, in the years 1795-98, by W. R. Broughton. London. 1804. p. 140.*

von Krusenstern *Broughton's Cliffs*. I believe *Coen's Cliffs* to be the same as the *Redfield-Rocks*, marked as a new discovery on the small chart of Commodore Perry and on the Admiralty chart at about $33^{\circ} 55'$ N. Lat. and $138^{\circ} 50'$ E. Long. If off this height there were any other cliffs than *Coen's (Broughton's Black Rocks)*, Broughton, who cruised there, would have seen them. If however the *Redfield's Rocks* exist, they lie more to the north, and are the same as marked on Janssen's chart at $34^{\circ} 35'$ N. Lat. and at the meridian of *Cape Idsu*, and therefore also seen by Vries. The islands N. W. by W. five miles and N. N. W., six miles from *Barnevelt's Island* were also observed by Vries on this voyage, and mapped as *Gebroken Eilanden*. This name (*Broken Islands*) applies to these islands, and not to the whole group. To the whole chain — a series of active and extinct volcanoes from *Ohosima* to *Fatsi sjó Sima* — we have given the name of *Tasman's Islands*. I have thought it necessary to enter into these historio-hydrogeographical particulars, not only to fix indisputably the discovery of this whole chain of islands, more than two hundred years ago, by Quast, Tasman and Vries, but also to make the justness of their observations appreciated by comparing them with those of celebrated navigators of our own days.

III. *The Discovery of the East Coast of Japan, from Cape Sirofama on Nippon (Point Bosho) to the North point.*

The East point of the island *Nippon* then was unknown, with the exception of two points seen and

mapped by Quast and Tasman in 1639. Those navigators reconnoitred the coast of *Japan* at $37^{\circ} 30'$ N. Lat. on the 24th August, and at $34^{\circ} 54'$ N. Lat. on the 1st and 2nd November. The first was a part of the coast between *Cape de Kennis* and the *Rookhoeck* (of Vries); the other was the *Cabo de Bosho* (of the Portuguese), the south point of the province of *Awa*, on the west side of which is the entrance to the bay of *Jedo*.

We are indebted to Vries for the discovery and observation of the whole coast from *Cape Bosho* to the North point of *Japan* (from $35^{\circ} 58'$ to $41^{\circ} 25'$ N. Lat.); a coast which, before the opening of the harbours of *Simoda* and of *Hakotade* (on *Jezo*), had been visited by no navigator but by Captains Spangberg and Walton in 1739, * by Capt. King in 1779, † and by Capt. Broughton in 1796 and 1797. ‡ The two last-named hydrographers could however only follow the course of our navigator and confirm his discoveries with the assistance of the very faulty little chart of Vries's voyage, which was published about 1650 by Johannes Janssonius. **

The writer of these pages too, when treating this part of the coast of *Nippon*, had no other chart than Broughton's †† to refer to, except original Japanese ones.

It is therefore now of real importance to explain

* *Voyages et découvertes faites par les Russes le long des côtes de la Mer glaciale et sur l'Océan Oriental, tant vers le Japon que vers l'Amérique*, par Mr. G. P. Muller. Amsterdam 1766. vol. I. p. 210.

† *Troisième voyage de Cook*. Tom. IV. p. 372. § See ante.

** *Nova et accurata Japoniæ, terræ Esonis ac insularum adjacentium ex novissima detectione descriptio apud Joannem Janssonium*.

†† *A general chart of the Japanese Islands, and N. E. Coast of Asia*, in Broughton's Voyage.

Vries's discoveries by his lately discovered Log. As however the knowledge of the configuration of the east part of the coast of the large island of *Nippon* as yet rests on the authority of Japanese charts, according to which the most important promontories, gulfs and bays discovered by Vries, King and Broughton, have been geographically determined, named and mapped, we ought to take a Japanese map for our foundation when reviewing the discoveries of Vries. For this purpose we have chosen our map of the Japan empire, compiled from original maps and the observations of the court-astronomer at *Jedo*. * And to profit as much as possible by the observations of our renowned navigator, we will endeavour, while comparing them with those of others, to work them up into a mariner's guide along this hitherto little known coast. We shall thus be rendering a service to the navigation along the East coast of Japan. †

Cape Boshō. The S. E. point of Japan, formed by a promontory of the region of *Awa* on the island of *Nippon*, is called *Cabo de Boshō* by the Portuguese, from the neighbouring harbour of the town of *Fōsjo*.

* *Karte vom Japanischen Reiche nach Originalkarten und Beobachtungen der Japaner*, in VON SIENOLD'S *Atlas von Land- und Seekarten vom Japanischen Reiche* No. 1.

† In the account of the voyage of Capt. Fabius, for the purpose of visiting the ports of *Hakotade* and *Simoda* with the Dutch screw Corvet *Medusa*, September and October 1856, it is said: "The 17th Sept. we left *Hakotade* and continued our way along the east coast of *Nippon*, but this voyage was exceedingly difficult. *A nearly unknown coast, strong currents, violent storms, two hurricanes, bad charts*, (among which that of v. SIENOLD is by far the best), made that voyage long and dangerous." sic!

On the original Japanese maps the eastern point of this cape bears the name of *Firatatsi*, and the western that of *Susaki*, the strand between the two being called *Siro fama*, i. e. white strand. *Cape Susaki*, according to the observations of the court-astronomer Sakusajemon, lies at $34^{\circ} 58' 30''$ N. Lat. and $139^{\circ} 38'$ E. Long. of Gr., and *Cape Firatatsi* (called *Cape King* by von Krusenstern) at $34^{\circ} 55'$ N. Lat. and $139^{\circ} 57'$ E. Long.; the southmost point of *Siro fama* at $34^{\circ} 54'$ N. Lat., and $139^{\circ} 44'$ E. Long. On Broughton's original chart *, the S. E. point of *Nippon* is given at $34^{\circ} 55'$ N. Lat. and $140^{\circ} 12'$ E. Long. Vries determined the latitude of *Cape Bosho* at $35^{\circ} 14' 30''$ N., and observed there a deviation of 7° East in the compass. By the American expedition under Commodore Perry, the geographical position of *Cape Firatatsi* was fixed at $34^{\circ} 53' 15''$ N. Lat. and $140^{\circ} 18' 15''$ East Long. of Gr., which pretty exactly agrees with the lat. and long. calculated by von Krusenstern according to the observations of Broughton ($34^{\circ} 54'$ N. and $140^{\circ} 19'$ E.) †. "*The land is here in many places double and triple (the mountains Kjozumi, Takazukajama, Tenin, the last mount King and Katsijama) but perpendicular to the water, with many white places*

* This chart, which was lent to the author by Admiral Sir Francis Beaufort, head of the hydrographic department of the Admiralty, is there booked under Let. B. c. l. 480. At the end of this chapter we will give a comparative review of the names and geographical position of most of the important points on the East coast of *Nippon*, as found in Vries, King, Broughton and von Krusenstern.

† *Recueil de mémoires hydrographiques pour servir d'analyse et d'explication à l'Atlas de l'Océan pacifique par le Contre-Amiral de KRUSENSTERN. St. Petersbourg 1827, p. 178.*

(*Siro fama*); the land to the South of Cape Bosho is higher than to the North. One can easily take soundings from 36 to 10 fathoms, sometimes coral ground, sometimes shingle, sometimes sand". The current flows here to the N. E. and N. N. E. Captain King reckoned the rate of the current, which ran at 45 English miles E. from this promontory N. E. $\frac{1}{2}$ N., at 3 English miles an hour.* It is here the N. W. limit of the Japan stream (*Kurosiwo*, i. e. black sea-stream), which, according to the observations of the American expedition, at one degree more to the south still runs with a rapidity of from 72' to 80' a day. Vries saw here sea-weed floating, which was also observed by the American expedition in unusually large quantities off *Iso mura*, and may be compared with the *fucus natans* of the Atlantic gulfstream.

In the bay of *Iso mura* they also observed a discolouring of the water, probably attributable to the floating banks of seaweed. Here, from 74 to 80 fathoms; fine black sandground was leaded.†

The White Point. "From the S. E. point of Japan, named Bosho, the coast stretches N. N. E. to the white spotted point; then there is a low-shored bay, stretching about 4 miles away to the north, and high sandhills". The White Point, on the Japanese maps *Dai do saki* or *Oho figasi saki*, i. e. the great East point, is, according to Vries, (Jansson's Chart) at 35°

* *Troisième voyage de Cook*. Tom IV. p. 384.

† *Narrative of the expedition of an American squadron to the China seas and Japan, performed in the years 1852-54, under the Command of Commodore M. C. Perry, by Francis L. Hawks*. New York 1856. p. 497.

25' N. Lat. A little more to the south of this point another promontory runs out into the sea, bearing the name of *Katsura saki*, from a small neighbouring town. The bay to the south of that promontory, which Vries regarded as "*the low foreland into which a river seems to run*", is the bay of *Utsi ura* with the harbour of *Kominato* (i. e. small haven), into which several rivers throw themselves, of which the *Itsumigawa* and the *Amanogawa* are the largest. This harbour is 32 Ri * from Cape *Sagami* (also called *Nagatzuru* and *Monomi saki*), at which place is the entrance to the bay of *Jedo*, and is the first we come to, passing along the S. E. coast. Close to the *White Point* lie several rocks and small islands, the largest of which is called *Uwarasima*; they seem to run out into the sea under water, and to end in a reef. The American expedition observed here a broken and variously coloured sea, at a depth of 30 fathoms coral-ground, which decreased eastwards to 21 fathoms. King and Broughton saw many fishermen off here, and admired the industry with which the land was cultivated.

The low Bay. From the *White Point* to the *Sandhill Point* the coast retires in a bay about nine miles wide, which bears the name of *Siro sato fama* (white village strand). It is a low region, watered by several rivers and lakes. The greatest river is the *Kuri jama gawa*, which throws itself into the sea at the frontier between the regions of *Kadsusa* and *Simosa*. Along this bay, "*where they*

* According to the calculation of the court-astronomer Sakusajemon there are 28½ Ri to one degree of lat. of 15 German miles. Wherever we speak of *miles*, German or geographical miles are meant, except where the contrary is expressed.

saw much sea-weed floating and lambs or divers swimming", Vries sailed N. E. by N. to a distance of from 4 to 5 miles from *Sandhill Point*, leading from 10 to 20 fathoms of black sandground, and farther up, to 4 miles E. from that point, from 22 to 42 fathoms. The stream runs along the low shore N. E. and N. N. E.

The *Sandhill Point*, called *Dai do saki*, lies at about 9 miles N. E. by N. from the *White Point*, according to Vries at 36° N. Lat., and according to the original map of the court-astronomer Takahasi Saku Sajemon at $35^{\circ} 43'$ N. Lat. and $140^{\circ} 46'$ E. Long. "About a mile off the E. of the *Sandhill Point* lies a small island resembling the *Cannibals island* in the straits of *Sunda*. About a mile to the north of said island there is another small island, but somewhat more level, like the island *Harlem*, but it lies close under the shore. From the *Sandhill Point* the land falls way to the N. N. W., and makes again a deep curve, being all equally low land." This is *Whale-bay*. At *Sandhill point* a large river, the *Nasaka*, navigable far inland, throws itself into the sea. At the mouth of this river there is also a good harbour, *Tosi minato*, reckoned to be at 38 Ri from above mentioned harbour of *Kominato*. Within a distance of about 5 English miles from this point, King observed a very strong current of five English miles an hour.*

Whale Bay, so called by Vries because of the multitude of porpoises, dolphins, and whales they saw there. Much sea-weed was also remarked, which, as is well-known, the whale generally seeks after. On the Ja-

* *Troisième voyage de Cook*, l. c.

panese maps this bay is called *Filatsi hara no*, (i. e. level field of the *Filatsi* region). Running landwards with a N. W. course, one finds from 40 to 26 fathoms oozy ground. The land is low and flat, and marshy on account of the water which sinks down from the high interior, and collects in pools and lakes (such as the lakes of Takeda and Finuma). In the N. W. "on the low land in the deepest of the curve," rises "a high rugged mountain" (the chain characterised by the *Asife*, *Majumi*, *Ohonô* and other summits). The N. extremity of this bay is a low, flat point, called by Vries the

Low Point, and marked on the Japanese maps *Minato saki*, i. e. harbour point, because there, at the mouth of the *Nakagawa*, there is a considerable harbour, 3 Ri from the town of *Mito* and 20 Ri from the harbour of *Tôsi*. This distance agrees with the observation of Vries, "*the N. point (Minato saki) lay then S. by W. 3 miles from us, and Sandhill point (Tosi minato) lay then S. by W. a good six miles from us; the N. point is a low flat point.*" Here, and more northwards, one has from 40 to 50 fathoms of sandground, which dries up as one approaches the shore. The land here begins to become higher to the

Tree point. "*A steep point resembling an island, from behind which, to the North, we saw several fishing-boats come out to sea to fish; coming somewhat nearer to the point, had 24 fathoms, white sandground, it having been black sandground before. When a mile from the point, we saw that a river fell into the sea behind it to the north. Inland, the country is very high, in some places 2, 3, 4 fold, and in many places the high land rises perpendicular out of the water. They (the fishermen) named the river behind the above men-*

tioned steep point, *Gissima*, and offered to bring us into it, saying that there at the entrance there was 9 or 10 fathoms water and that it was not good round the North. In the steep point of *Gissima* stands, somewhat inland, a clump of trees as if it was a fort, of which one tree sticks out above the others, having on the top a round crown." The tree point is the promontory named *Siwoja saki*, the river the *Same gawa* or salmon river. No such place as *Gissima* exists here, possibly the city of *Idsumi* was meant, which lies at about a mile from the mouth of the river, or perhaps the high mountain *Irusima*. Close to the mouth of the river is a harbour, the distance of which is given as 24 Ri from *Minato saki*. The high land is formed by a mountain chain from which arise the *Jonowoko*, *Akainowoka* and *Irusima*, behind which the tops of the *Jekojama* and other high mountains appear. The *Tree-point* W. $\frac{1}{2}$ S. 3 miles, and another point, "lying there to the north, very rugged with small mountains was N. $\frac{1}{2}$ W. 3 miles, (Vries was at $37^{\circ} 5'$ N. Lat.) on sounding were found to have black sandground, at a depth of from 40 to 36 fathoms." According to this observation the *Tree point* must lie at $37^{\circ} 1'$ N. Lat. On our map it lies at $36^{\circ} 52'$, therefore 9' more to the south. "About 6 miles from this point the high land begins to rise towards the North."

There is

The Rugged Point, also called *Cape de Kennis*, because Vries cruised for six days off this point while waiting for the yacht *Breskens*. Observing this cape on May 25th. within a distance of 4 miles from the land S. W. by S., and the most northern land that could

be seen (*Karasu saki* on the Japanese maps) N. W. by N., Vries found himself at a latitude by account of $37^{\circ} 39'$ N. According to our map he must have been at $37^{\circ} 32'$ N. Lat., which only gives a difference of $7'$ for the latitude of this Cape. According to Vries therefore *Cape de Kennis* lies at $37^{\circ} 11'$ and on our map at $37^{\circ} 4'$; on Jansson's however at $37^{\circ} 22'$ N. Lat. On noon of the 26th May, having *Cape de Kennis* at a distance of about 7 miles W. $\frac{1}{2}$ S., Vries found himself by observation at $37^{\circ} 20'$ N. Lat. According to this observation however the above named cape would be at $37^{\circ} 16'$ N. Lat., which agrees in a remarkable manner with the latitude, afterwards taken by Capt. King, of $37^{\circ} 15'$ N. The latitude given by Broughton on his original map agrees perfectly with that on our map. The depth leaded off *Cape de Kennis* during the cruise, offers the following result. At a distance of from 2 to 3 miles, from 25 to 40 fathoms oozy black sandground, at 4 to 5 miles distance, from 45 to 95 fathoms oozy black sandground, but could however bring none up.

On the map of Jansson and on the map of "*Gedaene Ontdeckinghe onder den Commandeur Marten Gerritsen Vries, A^o. 1643,*" * we find a point called "*Roock hoeck*" (Smoke Point), which is however not mentioned in the Log.

Smoke point is doubtless the most northern land seen on the 25 May to the N. W. by N. and named *Karas'no saki* (i. e. Raven Cape) on the Japanese maps "*A point to the north of us which was high land, but ran down low to the water.*" The coast stretches out

* VON SIEBOLD, *Atlas von Land- und Seekarten*, N^o 11.

S. and N. Sounding on the 27th May, this point S. W. and the most northerly land N. N. W., Vries found himself at the lat. by account of 37° 50' N., so that the latitude of the *Smoke point* would be 37° 42', which perfectly agrees with Jansson's map and only offers a difference with our map of — 3'. "*There was here land with white spots with some small sandhills; about two miles from land we had a depth of from 19 to 20 fathoms, shingle and coarse sandground; here the bottom was abruptly unequal in depth. The promontory is sand-hill ground, but else high land, in some places double. The land to the North seemed to begin to form a bay. We learned that the stream here runs backwards and forwards along the shore.*" The change of the bottom, which was before oozy and black sand and here shingle and coarse sandground, proves that on the 27th May Vries was at about 3 miles distance from *Smoke point*, where a large river, the *Tamano gawa*, throws itself into the sea, and carries a quantity of black gravel with it. The *low Sand point* is also but once mentioned in the Log, viz. on the 31st May, at noon, where Vries found himself at 38° N. Lat., within a distance of 7 or 8 miles from it, in from 70 to 75 fathoms. That point is marked on Vries's and Jansson's map at about 38° 10' N. Lat. The place however where Vries threw out the bow-anchor on the 29th May, in 29 fathoms of shingle bottom, and where at noon he was by account at 38° and 4 miles from shore, is marked by a small anchor; it is to the S. E. of

The Low Sand point, named *Ara fama*, (desert strand) on the Japanese maps. One of the largest rivers

of the east coast of Nippon runs there into the sea, the *Ara Kuma gawa*, to which also the unequal depth, the sand-banks and the shingle bottom is to be ascribed. The large bay running from here to *Cape Kinkwasan*, named *Eylant Toy* in the Log, is the bay of *Sendai*, containing the haven of *Siko kama*, reckoned at about 42 Ri distant from Cape de Kennis. On our map the mouth of the *Ara kuma gawa* lies at $38^{\circ} 5'$ and the haven of *Siko kama* at $38^{\circ} 22'$ N. Lat.

Cape Kinkwasan. An island *Toy* does not exist. Without doubt however the island of *Kinkwasan* is meant, lying at about 1 mile from the promontory which forms the eastern extremity of the bay of *Sendai*. "*The projecting point of Toy is easily distinguished; when one comes out of the South, it appears as a high island, and a little to the west with a row of broken mountains with a short space of low land.*" Vries approached to within a mile of this island on the 1st of June, and sailing in between this and another, which he named *Table island* (on our map *Nagafama*); "*were about 1 mile from the shore, then turned, the sea having turned.*" According to his observation on the 1st June, when, the pointed mountain of *Toy* N. W. $\frac{1}{2}$ W. at from 2 to 3 miles distance, he was at the latitude by account of $38^{\circ} 24'$, this island must be at $38^{\circ} 32'$ N. Lat., which only offers a difference of + 7' with the calculation of the Japanese court-astronomer Sakusajemon. This observation was confirmed on the 2nd July, when the south extremity of *Toy* was found $38^{\circ} 29'$, agreeing with the south extremity of *Table island*. "*Right to the North of the south end of Toy, 1 to 2 miles lie some broken islands*

and cliffs under shore; somewhat more to the land lies another small island, a little longer and higher (*Dezima*); close under the shore, half a mile more to the north, lies another small round island like a man's hat (*Jesima*), and at both ends sharp cliffs rising above the water like so many needles. Between the former island and the Man's hat, a river seemed to run through the country." This is however no river but a deep bay called *Sjugo fama*. "The coast stretched away here to the north, but with many bays and was pretty high land." On the original map of Vries these small islands are called "*Schildpads* (turtle) islands". For the rest the description of them and of this landmark, so important for the navigation of the East coast of *Nippon*, is indeed excellent. We will however add the remark that between the so-called island of *Toy* (*Kinkwasan*) and the main shore there is a canal, navigable for large Japanese ships, called *Jama tori no seto*, i. e. pheasant canal, and that to the north side of the bay of *Sjugo fama*, a branch of the large river *Figami gawa* falls into the sea, that river being also navigable for large vessels, and running out through a canal near *Miato*, a harbour in the bay of *Sendai*. By means of this canal, which is 9 Ri long, and fit for all but very large ships, the doubling of cape *Kinkwasan* is avoided, a distance of 22 Ri. It may also perhaps be navigable for small steamboats. Along the greater part of the east coast of *Nippon*, the water gradually dries up to 10 fathoms and less; round about Cape *Kinkwasan* however a depth of 80 fathoms is found at but a short distance from shore, and some miles farther no soundings at all can be obtained. In the S. E. of *Kinkwa-*

san, 2 or 3 miles from there, Vries observed the stream running to the south. Broughton also observed (7th and 8th September 1797) along the east coast of *Nippon* at 39° 55' to 40° 44' N. L. a strong S. and S.W. stream. This stream Vries fell in with at 37° 39', at a distance of 4 miles from the coast, and declared it to be the cause of the exceedingly hollow sea, "*because the stream ran against the wind (from S.S.E.)*" The Japanese stream, the already mentioned *Kuro siwo* or black sea stream, seems to break its strength against the great east point of *Nippon*, Cape *Daihó saki*, and then to run along Cape *de Kennis* more to the N.E. Besides its velocity and direction, which cannot escape the seaman's notice, the course of this stream is characterised, during the colder seasons and in higher latitudes, by the thick mist which covers it in the morning and evening. As far as to nearly 38° N. Lat., Vries often complains of "*fearfully dark mist*," whilst more northerly he was favoured with very fine weather. It can therefore be accepted as a law of this warm stream, that its influence does not extend farther along the east coast of *Nippon* than to 38° N. Lat., and that a cold stream rushes in between that and the coast which, from the South coast of *Jejó*, and possibly from the straits of *Tsungar*, where from this canal narrowing to 12 English miles the passage of all that water is prevented; it falls off and runs South. That it is more or less exposed to the influence of variable winds is of course, and its strength seems gradually to break itself as it were against that of the warm stream, though both streams flow on perfectly distinguishable. For centuries the boundary line

of the *Kuro siwo* off the *Tasman's* islands has been observed and determined by the Japanese. The temperature of the seawater to the North of the east coast of *Nippon* is considerably lower than that of the *Kuro siwo*, the maximum of that stream being 86° Fahr., and that of the sea at Cape *Kurosaki* ($39^{\circ} 56'$) only 55° Fahr.

The Table-Mountain. "*In the evening the east point of Toy S. W. by S. 5 or 6 miles from us, we saw in the N. by E. a very high flat mountain, to which we gave the name of the Table-mountain.*" According to the soundings taken on the 2nd June this is probably the Cape *Wosaki* of the Japanese maps; which also agrees pretty well with Jansson's map and with the observations of King and Broughton. Hence the point of the Table-mountain must be about 39° to $39^{\circ} 15'$ N. Lat. The decision of this we leave to the examination of — we hope — Dutch navigators. We regret however that Commodore Perry steamed past the east coast of *Nippon* from the White point to cape *Sirijasaki*, a distance of four degrees and a quarter lat., or 255 English miles, without more closely examining the geographical position of this so little known coast.

Cape de Goeree or Good Roads. "*A steep high broken point, which we called Cape de Goeree, because there seemed to be many harbours and islands, behind which was as it seemed a good roads. The coast rose here N. by E. and S. by W.*" According to his observation at noon June 3rd, where Vries at $39^{\circ} 28'$ N. Lat. had Cape de Goeree N. by W. 4 miles distant, this Cape must lie $39^{\circ} 45'$ N. Lat. On Jansson's map it is placed at $39^{\circ} 40'$. It is the most easterly point of *Nip-*

pon, called *Kuro saki* (the black cape), which according to Sakusajemon lies at $39^{\circ} 56'$ N. Lat. and $142^{\circ} 10'$ E. Long., according to Broughton's original map $20'$ more to the east, and according to von Krusenstern's calculation $10'$. We are of opinion to give the preference to the longitude of Vries now that we are acquainted with his Log, and suppose that, on the Japanese maps, Cape *Kuro saki* is placed too far from *Tako fama*, at which is the so called harbour of *Nabo* or *Nambu*. The harbour of *Nabo*, to which the Japanese fishermen offered to bring Vries, is that of *Mijako*; and that of *Schay* is that of *Kuzi* (called also *Kuziwoka*). The former is 38 Ri from the harbour of *Desima* near cape *Kinkwasan*, and the latter lies 20 Ri to the north of that of *Mijako*. Both these harbours and one still 20 Ri more to the north, near the north east point, are the three principal harbours of the most northerly part of the east coast of *Nippon*, belonging to the district of *Nambu*: whence *Nabo* or *Nambu**. "A large canal, stretching S. S. W., runs very deep inland, by which as far as we could see, one could sail quite up from the sea," was named *Voert van Goeree* (canal of Goeree). It is the capacious entrance to the harbour of *Mijako*, marked on the (too small) maps of Broughton and King as *Port* and *Cape Nambu*. The description of the entrance given by King agrees with the Japanese map of it. It is formed by two points of land, of which the

* We have already shown in our *Geschichte der Entdeckungen*, that it was close to this harbour, and probably in the gulf of *Komoto*, that the Yacht *Breskens* fell and that Capt. *Schaep* was taken prisoner. Comp. p. 100. Remark 20.

northern low one (*une pointe basse de terre*) is called *Tako fama*, i. e. Cuttle fish strand; the southern is higher and ends in a conical mount (*une colline en forme de cone*) and has therefore the name of *Taka fama*, i. e. high strand.* The depth of the sea is here, at from 2 to 4 miles distance from shore, above 100 fathoms oozy ground. Cape *Kurosaki* is characterised by some high conical mountains (the *Kairaki* and *Kabutojama*) which are covered with snow till the end of May.

The North point. "*The most distant land we could see lay N. by W. 8 miles from us (and Cape de Goeree S. S. W. 2 miles) and was a high flat topped point (the Croonberch?); and a low, flat, declining point lay N. N. W. 4 or 5 miles from us.*" The supposed north point of Japan, is, as may be seen from the Japanese maps and the examination of Broughton, only a part of the coast which stretches from the eastern extremity of *Nippon* (*Cape de Goeree* or *Kurosaki*) in a north-western direction up to $41^{\circ} 34' N.$ Lat. This north point seen by Vries is Cape *Tane itsi*, and the "low, flat, declining point," the cape *Misaki* of the Japanese maps, the former being, according to Jansson's map, at $40^{\circ} 10'$, though placed from 15' to 16' more to the north by Sakusajemon, King and Broughton. As before becoming acquainted with Vries's Log we supposed that what he named *North point* was Cape *Misaki*, because the latitude given to it on Jansson's map exactly agreed with it, we have given *Misaki*

* Compare: *Troisième voyage de Cook*, Tom. IV, p. 372. pl. 79. *Geschichte der Entdeckungen im Gebiete von Japan*, von v. Siebold, p. 10 and 92. Remark 20.

the name of *Cape de Vries* in our map, while we have preserved the name of *Pointe Nord* (King), given by von Krusenstern to *Cape Tane isti*. Along this coast, up to about $40^{\circ} 23'$ N. Lat., at a distance of from 4 to 5 miles, one finds from 72 to 100 fathoms of gray sandground.

Cape Sirijasaki, or North-East point (*P. Nord-Est*, Krusenstern). This cape remained unknown to the Dutch navigator Vries and the English Capt. King. On the maps of the 17th cent., projected on original Japanese maps, we find the northern part of *Nippon* bounded by outlines which make this cape of easy recognition. For its geographical position however we are indebted to Broughton, who sailed round that promontory on the 9th of August 1797, determined it more accurately on the 25th of the same month and named it *Cape Nambu*. On his original map *Cape Nambu* is at $41^{\circ} 15'$ N. Lat., and $141^{\circ} 30'$ E. Long. Von Krusenstern reckoned the position of this cape at $41^{\circ} 22' 45''$ N. Lat. and $141^{\circ} 30'$ E. Long. and Sakusajemon at $41^{\circ} 25'$ N. Lat. and $141^{\circ} 46'$ E. Long. On the map of "*the Kuril Islands according to v. Krusenstern, v. Siebold and Broughton*", published in 1856 by the hydrographic office of the Admiralty in London, von Krusenstern's calculation has been retained. Close to it lie rocks and a small island *Rakosima*, i. e. Seal island. On the 5th of June Vries was off this place and saw "*many seals and much drift*." It gradually deepened here from 70 to 100 fathoms gray sandbottom.

Cape Toriwisaki. (*The North Point of Nippon*, Broughton). The geographical position of this cape we also owe to Broughton: "*a low flat point situated in the*

latitude $41^{\circ} 31' N.$ and $140^{\circ} 50' E.$ of Greenwich." According to Sakusajemon however it lies 3' more north and 20' more east, and on the map of the Admiralty on the same lat. as Broughton, but 8' more to the east. This cape also ends in a small island named *Benten*, dedicated to the goddess *Ben zai ten*, a protectress against sea-monsters, and in a group of rocks which show themselves above water like needles.

Between cape *Sirijasaki* and *Toriwisaki* the coast forms a deep bay, in which is the harbour of *Ohobata*, 20 Ri from the harbour of *Kuzi* on the east coast. Farther to the west, near *Ohoai* is another small harbour for ships sailing to the bay and harbour of *Awomori*, reckoned at 23 Ri distance. Near cape *Toriwisaki* the coast takes a S. Westerly direction and afterwards a more southerly, and then runs by cape *Kusô domari* to the E. N. E.; and this northernmost extremity of *Nippon* takes the shape of a small peninsula as it were, where *Jakejama*, an extinct volcano, rises in the midst of small conical mountains to the height of 3200 feet. With the opposite N. Western extremity, of which the northern points are named *Tatsupisaki* and *Takonôsaki*, this peninsula forms the entrance, which is about 2 miles wide, to the bay of *Awomori*, covering a space of from 5 to 6 \square miles, and which in time can become of importance for navigation. Cape *Tatsupisaki* or Cape *Tsugar*, which according to von Krusenstern is situated in the latitude of $41^{\circ} 16' 20'' N.$ and $140^{\circ} 30' E.$ Long., forms, with the opposite Cape *Tadeisi* or Cape *Matsmai* on *Jezo* (situated in the lat. $41^{\circ} 30' N.$ and $139^{\circ} 57' E.$ Long.) the western entrance to the straits of *Tsugar*, while cape *Sirijasaki* and the opposite Cape *Jesan*, on *Jezo* (accordin-

to Broughton in the lat. $41^{\circ} 49' 20''$ N. and $141^{\circ} 20'$ E. Long). forms the eastern entrance to this strait, called on Japan *Kukinoseto*.

We have gone into this geographical digression to point out more particularly the course along the east coast up to the North point of Nippon, first navigated by Vries, and that up to the harbour of *Hakotade* on *Jezo*, which since the 31 March 1854 is open to all the maritime powers that have made a treaty with *Japan*.

The bay of *Hakotade* is situated N. W. $\frac{1}{2}$ W., at a distance of 45 Engl. miles from cape *Sirijasaki* on *Nippon*. Off this point and having passed the rocks projecting from this cape to the East and North sides, we see the capes of *Jezan* and *Siwokubi*, with the high land of *Jezo* and the North cape of *Nippon* (*Toriwisaki*). One must first steer on Cape *Jezan* and then, sounding Cape *Toriwi* west, on Cape *Siwokubi*. The latter is situated in the latitude of $41^{\circ} 49' 22''$ N. and $140^{\circ} 47' 45''$ E. Long. The stream which runs into the strait to the W. with a velocity of 5' per hour, is strongest in the middle of the strait, namely between cape *Siwokubi* and *Toriwisaki*, where, at the narrowest, the strait is from 10 to 12 Eng. miles. Japanese vessels sailing to the harbour of *Ohobata* go therefore close to Cape *Sirijasaki*, and hug the shore where the stream is less felt. The Japanese also report that at *Toriwisaki* it runs round close to the coast of *Nippon* W. by S. and S. W., which may be regarded as a backstream of the mass of water which cannot stream through the narrow passage between *Siwokuwi* and *Toriwisaki*. The north coast of *Nippon* is however cliffy, and in the N. N. W

of island *Benten* there are dangerous breakers. It is not advisable to run into the straits in misty weather or by night. Steamships can easily keep themselves at the entrance, with the head in sea till they have an opportunity of running in.

Pushing over from the North point of *Japan* to Cape *Jerimo* on *Jezo*, the *Castricum* led from 72 to 100 fathoms ordinary sand bottom; then there was no bottom and at a distance of 4 miles N. from this projecting point, again 50 fathoms sandground. This observation may serve as a standard of the depth of the E. entrance of the straits of *Tsugar*. In the middle of the straits one finds from 50 to 130 fathoms. When point *Siwokubi* (12' E. S. E. $\frac{1}{2}$ E. from the town of *Hakotade*) is passed, one can see the masts of the ships at anchor in the harbour, rising above a low isthmus. One must now steer by that. For sailing into the harbour, in clear weather, the *Komagatake* or *Saddle-mountain* (3169 feet high) serves as landmark. After (at the distance of 1 Eng. mile, in order to avoid the calm under the low shore) having sailed round the promontory (1136 feet high) united to the E. part of the bay by a low isthmus, on the N. E. side of which is situated the town of *Hakotade*, steer for the sharp peak of the *Komagataki*, bearing N., till the E. peak of the *Saddle*, bearing N. E. by N., opens to the westward of the round knob on the side of the mountain *, then steer over from N. to E. till you get the middle of the sandhill on the isthmus S. E. by E. $\frac{3}{4}$ E.

* Sailing-directions for *Hakotadi*, by Lieut. Wm. L. Maury, in *Hawks' Narrative*, p. 691.

By so doing one avoids a shoal running out from the West end of the town for $\frac{2}{3}$ of a mile in a N. N. W. direction. Then bring the sand-hill larboard, and run on till the West point of the town bears S. W. $\frac{1}{2}$ W., where the best anchorage is found at from $5\frac{1}{2}$ to 6 fathoms. Smaller ships can approach close to the town, to within $\frac{1}{4}$ mile of point *Tsuki*. Should the Peak on the Saddle not be distinguishable on account of mist or cloudy weather, steer as has been said, after passing the promontory, N. E. $\frac{1}{2}$ E. till the sand-hill opens in the given direction. In case of contrary winds there is good anchorage in the outer roads, in from 25 to 12 fathoms. The depth at the mouth of the bay is about 30 fathoms and gradually shoals up to 6 and less. *Hakotade* (the mouth of the river *Kameta*) is situated at lat. $41^{\circ} 49' 22''$ N., and $140^{\circ} 47' 45''$ E. long. The deviation of the compass is $4^{\circ} 30'$ W. High water at new and full moon 5 o'clock.

IV. *The Discovery of the Land of Jezu.*

From the supposed "*Northern point of Japan*", Vries steered N. N. E., and at noon of June 7th was at long. $162^{\circ} 1'$ E. from Teneriffe (according to our correction $143^{\circ} 39' 36''$ E. from Gr.), and at the lat. of $41^{\circ} 24'$ N.* From there up to $40^{\circ} 36'$ N. Lat. one

* Along the east coast of *Nippon* we have not noticed the longitude of Vries, because it is always accurately marked in the *Journal* during this voyage along the Japanese coast. We have however remarked that the guessed longitude of the *Island Fatsisjo* must be corrected

has from 70 to 100 fathoms gray sandy bottom, gradually deepening till no soundings more can be got. In the morning at about ten o'clock, they had seen high land. This was

Cape Jerimo, the S. E. point of *Jezo* (*Eroen* or *Groen*, Vries) "a high steep point", according to Broughton's original map at lat. $41^{\circ} 53'$ N. and $142^{\circ} 55'$ E. long. According to Sakusajemon's map however it is $41^{\circ} 56'$ N. and $143^{\circ} 39' 10''$ E. long. About 4 miles from this point 50 fathoms sand may be sounded, and 3 miles from it 24 fathoms shelly sand bottom. One can approach the high point to within $\frac{1}{2}$ mile, and afterwards steer along shore in a depth of from 20 to 24 fathoms. "From above point the land rises to the N. and is here high, double land, and the tops covered with snow."

Sounding the S. E. point S. W. $\frac{1}{2}$ S. 5 miles distant, opens in the N. W. by N. "a large bay or gulf." This is the bay of *Firoro*. Vries steered N. E. along shore. It was misty weather; the sea running round the N., carried him towards the shore, where he anchored in 26 fathoms coarse sandy bottom; they could hear the land-sea roar. The point of this anchorage is called

with about $+ 2^{\circ}$. That of point *Bosko* offers a difference of $+ 2^{\circ} 22'$ E., and that of Cape *Misaki* and Cape *Taneitzi* full $+ 3^{\circ}$ E. According to this correction Vries must have been on the 7th of June at noon, at the longitude of $143^{\circ} 39' 36''$ E. from Greenw., and sounding "the S. E. point of *Eso*" Cape *Jerimo*, 9 or 10 miles to the N., at the lat. of $41^{\circ} 24'$ N. Both observations, for so far as we as yet know the geographical situation of the S. E. point of *Jezo*, are very correct; the longitude differs scarcely anything with that of the court astronomer's map, and the latitude but $+ 9'$ with that of Broughton's original map.

Cabeljaus or Cod's point, and is probably the low extremity close to *Tobni* in the river *Monbets*, where the high land declines. *Tobni* is situated 35' more to the north and 18' more to the east than *Saruru*, the latitude of which the court-astronomers have determined at $42^{\circ} 7' N.$ and the long. at $143^{\circ} 56' E.$ This last named place is a Japanese post, and possibly one could anchor at the mouth of the river. This place has been visited by Japanese ships for above a century. I merely remark this because it is said in the Log: "*Further up the coast has many bays, but no anchorage where one can be protected against the sea.*" Coming to anchor on the 15th of June, in 15 fathoms shingle bottom, the longitude was reckoned at noon to be $42^{\circ} 44' N.$ and the S. E. point of *Jezo* 12 miles S. W. by S.; and sounding a low point (*Cabeljaus point*) 6 miles S. W. by W., "*we had another point to the N. E. $\frac{1}{2}$ E. 6 or 7 miles from us (Gout-sioer), where a river seemed to run as far as we could see; we also saw land E. by N.*"

Vries was therefore at a distance of $\frac{1}{2}$ mile from the considerable village of *Tokatsi* (*Tocaptie*, Vries), where the river *Usibets*, one of the largest on the east coast of *Jezo*, falls into the sea, and the coast retires in a low gulf.

On the original map of Vries * are the words: "*Off this place (Tocaptie) the first vessel from this land came on board, in it two men and a boy having much silver about them, and pointing to the mountains where there was abundance of silver.*" This first meeting

* Von Siebold, Atlas von Land- und Seekarten, N^o 11. E

with the natives of *Jezo* is recounted at greater length in the Log. With the exception of some former communications respecting this remarkable people, which we find in the letters of the Christian missionaries of the 16th and 17th cent.,* and some particulars on the same subject published by the fellow-travellers of Vries † in the 17th cent, the description of this people, as also of their manners and customs, as introduced into the Log in several places, is among the most important contributions we have obtained from European navigation respecting this tribe, now known under the name of *Ainoes* or the *Hairy Kurils*. In order however not to interrupt our geo-hydrographic illustrations at every moment, we will dedicate a separate chapter to the *Ainoes* at the end of this essay.

The Bay of Tokatsi derives its name from the village at the northern mouth of the delta-form mouth of the river *Usibets*, at the lat. of 42° 39' N. and 144° 22' E. The shore is low, and to the south of *Tokatsy* marshy; there are several lakes there, the largest of which is *Jentó*.

The River and the point of Kusuri. About 33' to the N. E. of *Tokatsi*, the *Kusuri* (*Goutsioer*, Vries) runs into the sea and the low territory through which it passes appears as an opening in the land; it was also observed by Broughton and marked upon

* *Rerum a Societate Jesu in Oriente gestarum Volumen, Coloniae. 1574 in 8° p. 426.* Nicolaes Witsen, *Noord-Oost Tartarije*, deel II, pag. 57. "*Bericht volgens het rijk Jesso, volgens zekeren brief van den vader Hieronymus de Angelis, geschreven in 'tjaar 1622.*"

† *Beschrijvinge van het Eylandt Eso soo alst eerst in 't selvige jaar door het schip Castricum bezeylt is. Tot Amsterdam 1646. Vergelijk ook N. Witsen, Deel II, pag. 50.*

his map. This river is the largest on the East coast of *Jezo*, and consists of the union of two arms, the easterly of which (bearing the name of *Kusuri*) rises in an inland lake at the foot of mount *Otosja*, the western out of an inland lake at the foot of mount *Akani* and thence called *Akanibets* (*bets* is river, brook). Both these high peaks belong to the chain, the S. W. part of which, according to Jansson's map, Vries called "*de Blaauwe berg*" (*Blue mountain*), and the N. E. extremity "*Batavia's bergh*." Broughton also mentions the former under the name of *Peaked Hill*, and took longitude $42^{\circ} 47'$ N. that peak N. 9° E. and the opening in the land (the mouth of the *Kusuri*) N. 21° E., at a distance of 12 or 13 Engl. miles. The country watered by the *Kusuri* is inhabited by the *Ainoes*, who have opened a way along the two arms of that river to the inland lakes of *Kusuri* and *Akani*, and thence along the rivers *Sjaribets* and *Ikutsinakots* to the north coast of *Jezo*. A few English miles to the east of the estuary and of the *Kusuri* projects a point to which we have given the name of *Cape Kusuri*. This cape, with the above mentioned opening, forms a bay, where without doubt ships can find a good anchorage, sheltering them against the N. E. and E. winds. This part of the coast, as yet unvisited by any European navigator, we particularly recommend to their attention, and have therefore given a more detailed description of it, according to Japanese maps and accounts.

From his anchorage off *Tokatsi*, Vries steered East to within a distance of about 50 English miles. Finding no land there, he changed his course N. E. and afterwards N. to get sight of land. At noon of the

11th of June, Vries was at the latitude of $43^{\circ} 10' N.$, $2\frac{1}{2}$ miles from land, in 27 fathoms black sand soundings. Off this place three points of the East coast important for navigation were determined; W. by S. 6 miles distant *Cape Seriba* (*Santanel*, Vries) forming the south extremity of the entrance to *Bay de Goede Hoop*; then N. E. 4 or 5 miles distant, *Cape de Manshoof* (*Man's head*), and W. by N. $\frac{1}{2}$ N. a river, the *Hokirarubets*, near *Biwase*. He also observed the little islands of *Fujutar* and *Kitafu*, and an island at the entrance of the bay *de Goede Hoop*, named *Daikok-sima* by the Japanese, *Horomosiri* by the *Anoes*, and *Van der Lyns eylant* by Vries himself.

Cape Seriba (*Santanel*, Vries) forms the S. shore, and *Cape Harasan* (*Caep Maetsnyker*) the N. one, of the entrance to the bay of *Goede Hoop*, before which lies a small island called, by the Japanese, *Daikok-sima* (the island of the god of wealth) and by Vries, after his return to this bay, *van der Lyn's island*. This island is united with the N. shore by a line of cliffs and from the S. shore a rocky reef rises above water $1\frac{1}{2}$ mile E. S. E. in sea. *Cape Seriba* lies 8' more S. and 5' more W. than *Atkesi* or *Akkes*, the principal place in the bay, which is placed by the court-astronomer at a latitude of $43^{\circ} 2' N.$ and $145^{\circ} 34' 27'' E.$ long. On Broughton's original map the entrance, with the little island in front and some rocks, is cursorily marked at $43^{\circ} N.$ lat. and $144^{\circ} 36' E.$ long. According to Vries it should be placed at $43^{\circ} 5' N.$ lat.

Bay de Goede Hoop (*Bay of Good Hope*) deserves this name given to it by one of our renowned navigators, who refreshed and repaired there from 16th of

August to 1st September. It is after that of *Hakotade* the best in *Jezo*, and the only harbour for larger vessels on the S. E. coast.

Of the *Bay de Goede Hoop* Nicolaes Witsen * communicated a sketch according to original drawings, which, when compared with the plan of Atkis consulted by the Russian Lieut. Laxmann in 1793 †, and with the two maps of *Jezo* by Sakusajemon and by Mogami Toknai ‡, agrees very well as far as the outer bay is concerned. According to this sketch the outer bay is full 3 miles deep and 2½ wide, surrounded by high land; the channel in the middle is wide, clear, and has a depth of from 15 to 6 fathoms clay soundings. Only along the east side, to the S. of a steep projection, named "*Caep Swers*," lie some rocks and cliffs, as also in the W. side which extends in a curve. As has been said the entrance is to the south about a mile wide, and bounded by *van der Lyn's* island and another small island *Bonmosiri*, from which a series of rocks spread out to *Cape Maetsnycker*, and by a reef projecting E. S. E. from *Cape Seriba*. To the N. E. lies the inner bay. According to the description of the worthy mate Coen and the plans of Laxmann and the Japanese geographers, it forms a basin about two miles wide, shallow however and full of oysterbeds, while in the middle there is some low flat, submerged land — four or five small islands. — It is surrounded by hilly

* Noord- en Oost-Tartarije, vol. 1. A. A. pag. 66,

† Von Krusenstern, Reise um die Welt, Atlas No. 104.

‡ Von Siebold, Atlas von Land- und Seekarten, No. 2. Die Insel *Jezo* und die Japanischen Kurilen nach einer Originalkarte von J. Sakusajemon. Bai von *Atkesi* nach M. Toknai.

land and intersected by large valleys, where, according to Sakusajemon and Toknai, two rivers and several small brooks throw themselves. The N. river is named *Tokisijarubets*, the W. one *Ukorubets*; though shallow, both are navigable for small boats for 2 or 3 miles up. Along the first named and another running farther to the E., *Kokopebets*, the *Ainoes* hold communication with the *Bay of Laxmann* in the East, the staple-place of the Kuril trade, and along the latter with their countrymen along the *Kusuri*. This continually increasing commercial communication with the interior of *Jezo* and with the Kuril islands, together with the situation of the *Bay de Goede Hoop*, so favourably situated for sea and coast navigation, give this place the best prospect of becoming one of the most important points in the Northern hemisphere of the great ocean for merchantmen and men of war, the more especially since the harbour of *St. Peter and Paul*, on the peninsula of *Kamschatka*, has lost its importance after the erection of that of *Aian* and of one in the bay *de Castries*.*

At the period when the bay was visited by the *Castricum*, *Atkis* was the only place inhabited by any of the *Ainoes*; now there are more than twenty hamlets round the bay, inhabited by *Ainoes* and Japanese fishermen.

* It was from these considerations that the writer, in his proposal for an embassy to *Japan* and treaty with that empire, presented in 1852 to the then colonial secretary, said in § 4: "that two stations for steam-navigation be appointed, one in the north of the empire, the *Bay de Goede Hoop* on *Jezo*, etc." Compare also the *Rapport aan Z. M. den Koning over de Japansche aangelegenheden*, presented by his Excellency the Colonial Secretary, Feb. 12th, 1855. Art. 4. l.

Up to the entrance of the bay, from 27 to 18 fathoms sandground may be sounded. Then run in by West of the steep point of *van der Lyn's* island, leaving to larboard a round steep point (*Cape Seriba*) from which projects a reef E. S. E. Coming within the point of the island, steer N. N. W. in from 15 to 6 fathoms clay bottom, to a sharp, steep point, (called *Caep Sævers* by Vries), which one runs round to anchor.

Behind that point is a small bank, covered by 10—11 feet water at low water, and by 15—16 feet at ordinary high water, but within it there are from 5 to 7 fathoms, and with spring flood of course still more. * One anchors here right before the village of *Atkis* in 5 fathoms clay bottom. A good anchorage is also to be found behind *van der Lyn's* island in 8 fathoms clay bottom, of which one can profit after running in or before sailing out. This harbour already offers the best opportunity for refreshing, repairing, or, in case of need, for overwintering. One can procure water, fish, cod, sturgeon, thornback, as also fire-wood and timber, in great quantities. Close by in the woods grow large sized oak, fir, birch, willow, lime and nut trees. † One also finds strawberries, raspberries ‡ and *rose apples*. **

* "Here in the bay and the roads of *Ackys*, an E. N. E. and W. S. W. moon makes high water."

† For shipbuilding are especially fit, the *Pinus jezoensis* (called in the Aino language *Fuppo*), *P. densiflora* (*Kui*), *Abies bifida* (*Sunk*), *Quercus dentata* (*Gomunni*) and another oak sort, *Bironi*. Good timber is also furnished by birch (*Tatsbi*), lime (*Kobergen*) and maple (*Fasini* and *Tubeni*).

‡ *Rubus palmatus* (*Imare fareppi*).

** The fruit of the *Rosa rugosa* and *Kamtschatica* (*Mau*) which is generally eaten by the *Ainoes* and *Kamtschadales*.

In the winter there are here bears, deer and birds; in the summer it is difficult to hunt in the dense forests and high reed. Now that this bay is visited by Japanese fishermen and merchants, and that a Japanese colony is probably established there, other refreshments and necessaries are certainly also to be obtained.

Cape Maetsuycker. Vries has thus named the E. extremity of the entrance to the *Bay de Goede Hoop*, and from that point, up as far as the coast extends N. E. an excellent drawing has been published.* This point is also thus named on Jansson's map. In the Log however we find no mention of it. On the Japanese maps it is marked *Harasan* and lies about 3' or 4' N. N. E. from *Atkesi*. The series of rocks which stretch thence to *van der Lyn's* island, and where, at low water, there is not more than 5 feet, makes the passage dangerous even for boats. For Japanese and other small vessels there are two more anchorages on this coast, viz:

The Harbour of Biwase, and the roads near the *Iruri* isles. The former lies 50' E. and some minutes N. of *Atkesi*, a small bay at the mouth of the river *Hokurbets*, and sheltered to the E. and S. E. by two islands *Kitafu* and *Binebisjo* (according to Laxmann *Tsigab* and *Kikumushiri*) and several (five?) high rocks. This is the river which was sounded at noon of the 11th June from the *Castricum* W. by W. $\frac{1}{2}$ W.; the islands were thought to be land, but "*some small cliffs lying under shore were seen above water.*" The latter anchorage is given on several Japanese maps,

* N. Witsen. Vol. II. A. p. 65.

but the situation and distance of the *Iruri* isles from the coast is still doubtful. According to the map of Mogami Toknai * and the original map of Broughton †, and also according to an old MS. map communicated to us by a Japanese physician, Fukutsi Gensok ‡, who was long resident on *Jezo*, they lie close to cape *Usu*, which we consider to be the *Caep de Manshooft* of Vries. There are two larger and one smaller named respectively *Iruri*, *Moiruru* and *Kinasitomari*. On Laxmann's plan these islands (they are there named *Erori*) also lie to the east of a promontory; and on his map is marked the name *Otishi* (*Otsui*), which all maps place close to cape *Usu*. On Vries's sketch ** several small islands are to be seen, and in the Log is said: "*Here (Caep de Manshooft N. W. by W. 2 miles from us and in 25 fathoms black sand ground) all is bad land, not high, without mountains; saw then N. W. by W. from us a reef with heavy breakers, and lay about a mile from land, and to the N. E. from Caep de Manshooft lay a flat island with three small mounts; the N. end of the island N. N. E. 3 miles from us.*" The reef is marked exactly the same in Laxman's plan, and it is thus confirmed that cape *Usu* is

Cape de Manshooft of Vries. On Sakusaje-

* Von Siebold's Atlas von Land- und Seekarten. N^o. 2. A.

† Catalogus librorum ac manuscriptorum Japonicorum a Ph. Fr. de Siebold collectorum. Lugduni-Batavorum 1845. N^o. 177. *Iszono dsu, Mogani Toknai geographi Jap. illustrissimi mappae geographicae quinque.*

‡ Catalogus librorum et manuscriptorum Japonicorum N^o. 178. *Matsumaō Jecono dsu est viro tabula geogr. exhibens insulam Jezo cuius caput est Matsumaō.*"

** N. Witsen, Vol. II, pag. 65. A.

mon's map it lies at $43^{\circ} 11' N.$ lat., and $146^{\circ} 14' E.$ long., and according to the soundings taken on board the *Castricum*, August 14th, is at lat. $43^{\circ} 16' N.$, and is very clearly described: "*gave that cape the name of Cape de Manshoofst, because it appears like a head.*" From this cape the coast projects N. E. and runs out in a narrow, low tongue, 50 minutes long, *Cape Nossiam*, — named *Cape Broughton* by von Krusenstern, and placed by him at $43^{\circ} 38' 30'' N. L.$ and $146^{\circ} 7' 30'' E.$ Neither Vries nor Broughton have however acknowledged this promontory as the E. extremity of *Jezo*, or known that a strait exists to the W. of this point, dividing the island of *Jezo* from *Kunasiri*, the most southerly of the *Kurils*. The island of "*Kunaschir*" *, divided by a strait from *Jezo*, is indeed marked on the map of the imperial Academy at St. Petersburg, published 1758, probably according to the observations of Spangberg and Walton; the discovery of this strait must however be adjudged to Laxmann (1792). His map however remained among the archives of Kamschatka till the beginning of the present century. To the renowned admiral Golownin and his deliverer from the Japanese prison, Admiral Ricord, we are indebted for a better knowledge of this strait, to which von Krusenstern gave the name of *Straits of Jezo*. Before leaving the east coast of *Jezo* with Vries, we must here remark that von Krusenstern has by mistake marked *Bay de Goede Hoop* twice on his map of *Jezo*, once under the name of *Bay de Goede Hoop*, according to Jansson's map, again under that

* Nouvelle carte des découvertes faites par de vaisseaux Russes etc. in Muller's Découvertes etc.

of bay of *Atkesi* according to the plan of Laxmann.*

Coen's Islands. To the north of *Cape Broughton* the island of *Kunasiri* spreads out in a wide bay, in which are several small islands. This bay was regarded, both by Vries and Broughton, as a part of the coast of *Jezo*. The smaller islands were however exactly distinguished, marked down and described, and named *Barbaren Island*, *Gebroocke Islands of Tamary* and *Walvisch (Whale) island*. The largest of them, situated to the N. E., Vries supposed to be a mountain belonging to the "*Land of Eso*." This mountain he named the *Sanberg* and the supposed Eastern extremity of *Jezo* "*Caep Canael* or *Caep Diemen*."

On his voyage thither and on his return, we see our bold mariner struggling for days among this group of islands against wind and weather, and it was especially the thick and continued mist of those regions, which obliged him to stop his course, diminished his horizon and prevented his observations.

The respective position of these islands was fixed as follows, by the compass observations of the 12th of August, when Vries was at latitude 43° 46' N.: *Caep Canael* (N. E. point of the island of *Sikotan*) 5 miles N. N. E. ½ E., *Walvisch island (Taraku)* N. W. ½ W. 1 ½ mile, and the *Gebroocken* islands W. S. W.; also the same day in the evening at lat. 43° 42' N., the *Barbaren island* W. S. W. 1 ½ to 2 miles, *Gebroocken island* N. E. by E. 1 mile, and another *low flat island* N. W. 1 ½ mile. To this we add the soundings of the reconnoitring at the

* During my stay at St. Petersburg in 1834, I had the pleasure of convincing the great navigator of this error.

latitude of $43^{\circ} 26'$ N. communicated by Nicolaes Witsen, *—*Barbaren island* (Westpoint) N. W. $\frac{2}{3}$ W. 2 miles, *Gebroocken island* N. W. $\frac{1}{2}$ N. 3 miles. The observations made on the 13th June, at the lat. $43^{\circ} 28'$ N. 1 mile S. W. of the *Barbaren island*, while riding at anchor, may also serve to determine the position of these islands. *Caep de Manshoof*. W. by N. 3 miles, the island with three small mountains N. W. $\frac{1}{2}$ N. 2 miles, a large reef N. by W. $\frac{1}{2}$ W. 1 mile, N. W. $\frac{1}{2}$ N. 3 miles, a low island, N. N. W. $\frac{1}{2}$ N. the Peak and N. E. by N. $\frac{1}{2}$ E. a flat island 1 mile, the *Barbaren island*. Also a group of cliffs, some above some under water, E. by N. 1 mile.

"Above-said islands are 1, $1\frac{1}{2}$ to 2 miles long, have many small islets and cliffs lying close to them; behind these islands, on the continent (the island *Kunasiri*) is an easily recognisable rock with a notch at the top (*Peak Anthony*) standing quite alone."

This mountain, which we shall speak of by and by, is here an important landmark, because it can be seen 20 miles out at sea. The islands and rocks, ten of which are named on Sakusajemon's map, † and on Toknai's map ‡ 12 large and small islands, and more

* N. Witsen, Vol. II. p. 65. E.

† According to Sakusajemon's map, these isles and rocks are named according to their N. E. direction: *Sisjō Utsuki*, *Akiro-ro*, *Juru*, *Harukaru*, *Sibots*, *Imukusibe*, *Taraku*, *Itasibets* and *Kabiof*.

‡ According to Toknai's map the islands are named after their size: *Sisjō*, *Sibjuts*, *Taraku*, *Juru*, *Akiro-ro*, *Harukaru*, *Onekinasi*, *Tomari*, *Moimosiri*, *Utsuki*, *Masirika*, *Honkinasi tomari* and *Monrika*. The rocks and cliffs we will pass over, only remarking that *onsiri* means island in the *Aino* language, and *tomari* residence or village, and that to all these names *mosiri* (pronounced in Russian *muschir*) is

than 30 rocks, and mostly by *Aino* names, form a considerable group, stretching from Cape *Broughton* N. E. to the "*Sandhill*" (the island *Sikotan*) and covering about 45' in length. On our improved map of *Jezo* * we have given this group the name of the worthy mate *Cornelis Jansz. Coen*, he being the man to whom we are indebted for the first geographical description of them in his Log.

Yet it is difficult according to all these observations by the Japanese, by *Vries* and *Coen* and also by *Broughton*, to fix the exact position of the four most considerable of these islands, and we still keep to their situation as given on *Sakusajemon's* map. In as far as regards the names given them by *Vries*, we think that *Juru* is *Barbaren island*, *Sibotsi* the *Gebroocken islands*, *Taraku* the *Walvisch island*, and the long island on the 13th of June N. W. $\frac{1}{2}$ N. 3 miles from the anchorage, is *Sísjó*. The depth is from 25 to 65 fathoms sand-bottom, gradually shoaling towards the islands, and to the S. E. of *Walvisch* island from 70 to 120 fathoms shingle †. On the voyage thither a N. stream was observed, on the return a N. E. one.

The Island of *Sikotan* (Russian *Tschikotan*). This is the "*Santberg*" (*Sandhill*) of *Vries*, and it is incomprehensible that this navigator and his able mate did

added. On the old map of *Jezo* of above-mentioned physician *Kensok*, there are already nine isles named, and according to their size: *Sísjo*, *Sírots*, *Kinazitoma*, *Juru*, *Harukaru*, *Akivoro*, *Monrika*, *Uritsi* and *Mojomosiri*.

* Von Siebold's Atlas von Land- und Seekarten, N^o. 2. A.

† Along the East coast of *Japan* and the land of *Jezo*, a shingle bottom is a sign that one is not far from the mouth of a river.

not recognize this island, so far separated from the supposed "*Land of Eso*, but regarded it as a mountain and the east extremity of that land, which he named *Caep Canael* or *Diemen*. We can only attribute this mistake to the dense and continued mist. Broughton sailed round *Sikotan* on the 6th and 7th of October 1796, determined its geographical position and gave it the name of the Russian captain Spangberg, who had visited it in the month of July 1739.* The geographical position was still more exactly determined in 1811 by Golownin and in 1812 and 1813 the East and N.E. coast was sailed round by his successor Ricord, on board the *Diana*. Spangberg determined the latitude at 43° 50'; according to Janssen's map *Caep Canael* lies at 44° 7', but according to Vries's observation of August 10th at 43° 56' N., which agrees within a few minutes with that of Golownin and of the court-astronomers of *Jedo*, viz., 43° 52' and 43° 58' N. Lat. Golownin's longitude 146° 43' 30" E. deserves as yet the preference, as it only differs 9' with that of Broughton original map, where the middle of the island is placed at 146° 52' E. Long. *Sikotan* stretches 5 English miles S. and N. and E. and W., and is recognisable by the "*Santberg*." Water, fire-wood and some fruits are to be found there. Capt. Spangberg, who had anchored close by in 8 fathoms, sand bottom, saw firs, ash and other trees, he also met natives who were very hairy and spoke the language of the other Kurils (*Ainoes*). The *Ainoes* met by Vries on the 13th of June were probably from here,

* *Voyages et découvertes faites par les Russes*, T. I. pag. 218.

and the place that "*these inhabitants named Takotekan and Rackokan, and which they pointed out as lying N. E. by N.,*" is the bay of *Sjakotan* or *Malakotan*, situated on the N. W. coast.

According to Toknai's map there are on *Sikotan* more than 20 hamlets of the *Aino's*, and many bays into which small rivers run and where Japanese ships come to anchor. Round about lie many little islands and rocks, and to the S. W. $\frac{1}{4}$ W. of the island, at a distance of from 9 to 10 English miles, a group of five low isles, named *Kabiof* according to Sakusajemon and according to Toknai *Mosirika*, and surrounded by rocks and cliffs. Golownin saw four of them and sailed close past. They are also given on Vries's map. There appear besides to be many cliffs and dangers round about these islands.

The Island of *Kunasiri* (*Kunaschir*, Russ.), on the above mentioned map of 1758 of the Imperial Academy of Science at St. Petersburg, has again gradually disappeared. Lapérouse, after the discovery of the strait which immortalised his name, steered, August 1787, N. E. along the neighbouring island of *Jeterop*, without however touching the N. E. coast of the supposed "*Land of Eso.*" Broughton also considered *Walvisch Bay* as the E. coast of *Jezo*. The discoveries of Laxmann remained unknown, and thus, after the return of Golownin from his Japanese imprisonment at *Matsmaë*, von Krusenstern became acquainted with the discoveries of this worthy navigator and was enabled to show the island of *Kwnaschir* and the strait which separates it from *Jezo* (straits of *Jezo*)

on his "*Allgemeine Weltkarte*" * published in 1815.

It is however only by Golownin and Ricord that we know the geographical position of the N. E. and S. W. end of the island, the N. E. point, cape *Moimoto* (C. Loffzöff, Krus.) being determined by Golownin at $44^{\circ} 29' 15''$ N. Lat. and $146^{\circ} 8'$ E. Long., and the S. W. end, the Japanese fort in the bay where Golownin was taken prisoner (*La Baie des Traîtres*) at the Lat. $43^{\circ} 44'$ N. and $144^{\circ} 59' 30''$ East Long. The knowledge of the whole configuration of the coasts we owe entirely to the measurements of the Japanese as mapped by Sakusajemon and Toknai, with the exception of the *Baie des Traîtres*, of which an excellent plan is published in the new Russian edition of Golownin's voyage in 1851. †

On the other hand the observations taken on board the *Castricum* during the voyage along the *Coen's* islands, and opposite "*Walvis Bay*," and during the time the ship lay at anchor, from the 4th to the 12th of June, at the W. entrance of the *Canael de Pieco* or *Antony*, ‡ are to be regarded as highly important geographical and hydrographical contributions and emendations. This is especially the case with the coast "reconnaissance" which Nicholas Witsen has preserved

* Von Krusenstern, Reise um die Welt, Atlas No. 1. His: Erläuterungen zu einer Chartre des ganzen Erdkreises, etc. I vol. 4^o. Leipzig, 1819. p. 88.

† Life and adventures of Basilus Michael Golofnia, and his imprisonment among the Japanese in the years 1811, 1812 and 1813. St. Petersburg, 1851.

‡ "Came to anchor, being $\frac{2}{3}$ of a mile from land, in 20 fathoms sand bottom; being under the N. E. extremity of Eso 2 miles W. of the Canael Antony."

for us, by which the direction and form of the high mountain which characterises the N. E. part of this island, is made clear. The "*recognizable mountain with a notch at the top*," lying alone, which was seen on the 13th of June on the main-land, is Mount *Tsinna* or *Tjósinobori*, the highest on the S. part of *Kunasiri*, and the "*high mountain with a peak*" observed on the 14th June at the lat. $43^{\circ} 25'$, to the N. W. by N. at a distance of at least 20 miles, is the volcano *Tsjatsja noburi*, to which Vries gave the name of "*Pieck Antony*," (after Antony van Diemen, governor-general of Dutch India in the years 1636—1645) and which the mate Coen names the "*Hooge Tepelberck*" (*high Nipplemount*), a literal translation of the *Aino* name, meaning *Tsjatsja* breast and *Nobori* high mountain, peak. Toknai says this volcano is still active and is the highest in the island. From a sketch of that volcano the Tepel (Nipple) is recognizable as a side eruption which has gradually become higher in the form of a skittle, a so called lateral eruption being also visible on the side of the mountain.* As this peak is very recognizable and can be seen 20 miles out at sea, its geographical position is of the utmost importance for navigation. According to the observations of Golownin and Ricord it is at a latitude of $44^{\circ} 31'$ N. and $145^{\circ} 46'$ E. Long., and on Broughton's original

* It seems that the summit or crater of that volcano had taken another form in 1796. "*In the bearing of the peaked hill the coast formed a bay, with a fine sandy beach; and the mountain, which in this point of view formed a saddle hill, presented a very magnificent appearance from its great height and extensive base.*" Broughton, *Voyage of Discovery*, p. 116.

map at $44^{\circ} 20'$ N. Lat. and $146^{\circ} 10'$ E. Long. According to Vries, who observed the "*W. point or lower point of the Tepelberck*," at noon of the 11th of July at a lat. of $44^{\circ} 43'$ N. S. by W. $\frac{1}{2}$ W. 2 miles distant, that point must be at $44^{\circ} 36'$, and the "*Tepelberck*", which according to Sakusajemon's map lies 10' more S., at $44^{\circ} 26'$, which agrees with the average observation of these navigators. If we reckon the latitude of the Peak according to the observations of the Court astronomer at *Nisibets*, in Laxmaun's bay, where this Japanese fort is placed, at $43^{\circ} 23'$ W. and the peak $1^{\circ} 6'$ more N., we shall find that of $44^{\circ} 29'$ W., and thus a result which inspires us the greatest confidence in the observations taken on board the *Castricum*. To the N. W. by W., at about 8' distance lies a mountain-chain forming a promontory, the N. extremity of *Kunasiri*, and named by Vries "*Maria berck*" This point (*Cape Rewansi*) is characterised by a small island, *Kawarsjo*, lying just before it, and by white patches. The observations made on the 11th July are too important not to be repeated here. "*As then lay the rugged mountain (the S. promontory of the "Staetenlant" (Jeterop) E. by S. $\frac{1}{2}$ S. 10 miles, and the point of Eso, off which Vossen island lies, lay S. E. $\frac{1}{2}$ E. 6 miles from us, and the W. point or declining point of the Tepelberg S. by W. $\frac{1}{2}$ W. 2 miles from us.*" The configuration also of the west side of "*Staetenlant*" at $44^{\circ} 53'$, is very serviceable in determining the respective situations of *Kunasiri* and the *Staetenlant*, and of the W. entrance to the strait, dividing the two, the *Canael de Pieco* or *Antony van Diemen*. The observations relative to it are: "*the Croonberck*

E. N. E. 6 miles, the *rugged mountain* E. S. E. $\frac{1}{2}$ E. 4 miles (roads of *Statenlant*), the *Vossen island* 3 miles (at the east point of *Kunasiri*) and the *Maria berg* W. by S. $\frac{1}{2}$ S. 4 or 5 miles (W. point of *Kunasiri*). Of the *Vossen island*, visited by Coen on the 7th of July, it is said: "*On this island, which was small and connected to the continent by reef cliffs, one could walk over to the continent of Eso at low water. We saw many red foxes † running about on the island and gave it the name of Vossen island. From this Vossen island a reef of cliffs stretches out N. N. E. in sea for more than a mile from shore, and makes said canal very dangerous indeed. This reef was broken, in some places the cliffs lying above water; there was a rapid stream to the East.*" Off this island they endeavoured to examine "*the capabilities of this canal.*" "*Could not see any dirt such as works off from Vossen island, saw the Caep de Canael (N. E. point of Sikotan) S. S. E. from us, shrouded in mist. Vossen island lay about $3\frac{1}{2}$ miles W. from the rugged mountain of the Statenlant, so that this Canal is about 3 miles wide.*"

According to the observations of Golownin and Ricord, Antony van Diemen's strait is 16' broad and according to Broughton's original map 20'. (We have here given this strait its true name, but remark at the same time that there is another *Diemen's Straits* to the south of *Japan*). Vries went ashore with his

* N. Witsen, p. 65. N.

† The red fox, named *Furetsup* by the Ainooes, is the fire-fox of the Kamtschadales, and the ordinary variety all about these regions.

crew and held communication with the natives (*Ainoes*). As he has given no name to this large bay where the *Castricum* anchored, and which is 15 English miles wide, from cape *Moimoto* to *Rewausi*, and about 5 deep, we will name it the *Crossbay*, for remarkably enough two wooden crosses were discovered here. "*One of our men found a wooden cross standing, brought it to the strand and showed it to the natives, who when they saw it appeared alarmed and motioned him to throw it into the water; those even who had touched this wooden cross might not approach them, till they had first washed their hands, and then they might. Another such cross stood at the commencement of the forest.*"

Doubtless these were Christian monuments and probably Christian tombs. Christianity was carried over to *Jezo* (*Matsmaë*) from *Japan* as early as 1622, and as, since 1639, the Christian creed was forbidden on penalty of death, they were probably converted Japanese or *Ainoes* who had fled thither and died. Among the *Ainoes* every thing that touches a corpse or anything belonging to it is regarded as unclean, whence the horror of the natives for these crosses. Probably they also know by tradition of that severe edict and the Christian persecutions. Christianity had not as yet found any other way to that part of the world than over *Japan*, for it was not till the year 1689 that the first news of the existence of *Kamtschatka* reached *Russia*, and in 1697 some Cossacks were the first to found a fort (*Ostroch*) on the *Kamtschatka* river.

The island of *Kunasiri* is 70 English miles long, stretching N. E. by N. and W. by S., very narrow, from 5 to 10 English miles, and united by a tongue

of land but a few miles broad, about the middle near cape *Ounneots*, where the land is low and the E. coast appears as a deep curve, named by Vries *Walvis Bay*, because they "*here saw many whales*." On the N. and S. parts of this coast there are however some bays which offer a good anchorage. That of *Ounebets* on the N. coast is probably the "*bay where one is safe from all winds*,"* and that of *Furuka* on the isthmus and *Tóbuts* or *Tóbets* on the S. coast are well deserving of notice as anchoring places for whalers. The latter is connected by a river with a large inland lake, whence the name *Tó* (lake) and *bets* (river). This lake which receives its supply of fresh water from the "*high interior mostly covered with snow on the summits*," as seen by Vries, must contain abundance of fresh-water fish, and offer excellent opportunity for the salmon in the spawning season, (here in the months of July and August). There is also such a lake on the S. W. coast, and at *Sasak* (as also on the W. side of the tongue of *Ikabanots*) there is a good anchorage. The strait which separates *Jezo* to the south of *Kuusasiri* we have given in our Atlas N^o. 2 A., according to the excellent map of Toknai; if to this be added the above named plan of the *Baie des Traîtres* by Golownin and Laxmann's plan, we have given all the geo-hydrographical materials we possess up to the present day respecting this commercial route so important for the future. I will however add that there is a strong current here

* Vries, "Gedaene Coursen" in von Siebold, Atlas N^o. 11. E. The Commander however supposed that the *Santberck* belonged to the *Lant van Eso*, and that the bay was also defended from the E. and N. E. winds.

at the W. entrance to the S. and at the exit round the E. Of the geological condition of this island we know nothing; precious metals will be to be found there; medicinal herbs, sorrel and stalks of a large screen plant, probably the edible *Heracleum*, were found in large quantities by the crew, and Coen speaks of firs fit for yards and masts, and of red foxes, otters, salmon, turbot, haddock, cod and other fish in abundance. We have spoken at some length of this island because it was very nearly unknown, its very existence having been doubted as late as 1820. * We take leave of it with the remark that on Golownin's map it is marked as the XXIst of the Kurils.

The Island of Jeterop (*Iturup*, Russ.). Our renowned navigator almost circumnavigated this island from June 13th to July 4th, when he anchored at some miles from the S. extremity. It is entirely his discovery, on which he put the Dutch seal of property by giving it the name of "*Staetenlant*" or "*Staeten eylant*" (*States Island*.) It is the largest of the Kurils, stretching in a N. E. and S. W. direction. †

The N. E. point of this island, *Cape Seworosi* (Cape Vries) is determined by Golownin at 45° 38' 30" N. Lat. and 149° 14' E. Long., and the S. point, *Cape*

* *Liste de Rounaski* ne se trouve pas dans la dernière édition (de 1820) des *Cartes de l'Océan Pacifique*, par Arrowsmith. v. Krusenstern, *Recueil de mémoires hydrographiques*, p. 200.

† Alas! the United Netherlands E. I. Company, that sent out the noble commodore to discover the *Gold and Silver islands*, never understood or valued the important results of his discovery of the *Land of Eso* and of the *Staten and Company's land* — the first *California* — because the gold and silver did not lay open on the ground.

Tesiko (C. Ricord) at $44^{\circ} 29' N.$ Lat. and $146^{\circ} 34'$ Long. The latitude of Cape Vries * is the same on Jansson's map and according to Vries's observation of the 5th August it should be $45^{\circ} 35' N.$, while that of cape Ricord, according to the observation taken July 4th while at anchor off the *Vossen island*, comes to $44^{\circ} 29' N.$; on the map of *Gedaene Coursen* that point lies some minutes more S., at the latitude of $44^{\circ} 25' N.$, as is also the case on Broughton's and Sakusajemon's maps.

Besides these two points, so important in a geographical point of view, and which have been since determined by other European navigators, we are indebted to Vries for other important geo-hydrographic observations along the E. and W. coast of this island, which will increase in value if we can succeed in making them agree with and explaining them by the maps of Sakusajemon and Toknai and those of Broughton and other navigators.

The soundings taken on the 13th of June at the latitude of $44^{\circ} 20' N.$ confirm the position of *Peak Antony* opposite the "*rugged mountain*," on the S. point of *Jeterop*, "*which was above very rugged and looked like an island, and besides another high mountain, appearing with a double head from a cleft*;" "*to the east appeared a high round mountain with its summit through a mist*," and of another "*high flat rugged moun-*

* On the map of Jansson and on that of Vries "*gedaene coursen*," the N. E. point bears the name of Vries, and not the N. W. as Lapérouse accepted and, following him, both von Krusenstern and Golownin.

tain, on which to the W. end stood a mountain in shape like a farmer's barn, (*Boerenschuer*), and is also the highest of that chain." "From said mountain stretched somewhat lower land till in N. E. by N. and was the farthest land we could see; the barn-mountain lay nearest us and was about 10 miles distant. The chain appeared to be connected till the rugged mountain and as we could observe a canal ran round to the W. between the rugged mountain and the peak mountain." Peak Antony lay W. by N., the *Rugged Mountain* N. W. $\frac{1}{2}$ W. "to the E." of the high round Mountain (*Croonbergh*); the *Boerenschuerberck* (*Barn mountain*) N. $\frac{1}{2}$ W. All these mountains are on our Japanese maps.

Peak Antony we know; the *Rugged mountain* forms the S. promontory (cape *Ricord*), the *high mountain with a cleft* is a mountain-chain which runs out on the W. coast near cape *Moikesi*, and the *Croonberck* is a high trachyte dome called *Bussanobori*, forming a far projecting promontory on the W. coast (*Cape Ito-birikawoi*); and the *Boerenschuerberck* is also a conical mountain on the east coast between *Kusiara* and *Tosimoinots*. The position of these mountains which serve as landmarks was confirmed by the observations of the 30th June and 2nd July. During the 17th and 18th of June Vries sailed along the E. coast of this island, steering N. N. E. and E. N. E. and sometimes had a glance of the tops covered with snow which rose high from *Cape Noneisjó*. These are *Refunsiri*, *Hetsirap*, and *Tokarunbe* which project above all others. Possibly also one could see from here the summits of the opposite conical mountains on the W. coast, the *Helono-*

huri and *Horosjunoburi*. The "steep cliff like a pyramid" is probably the island of *Obkarusibeisjó* which lies to the N. of "a steep point" (*Cape Horaka*) opposite a rivulet. The "high mountains very sparkling from the snow" seen on the morning of 19th June to the W., N. N. W. and afterwards seen N., are the high mountains which surround the N. extremity of *Staeten-island*, and cape *Seworosi* (*C. Vries*) running out to the N. E. and form the points *Okkebets* and *Posifuri* in the N. Their names are: *Sjusinobori*, *Isomattsenobori*, *Kitettsenobori*, and *Sjokkonobori*. From last named point the W. coast begins to bend in a deep curve, and afterwards runs out N. W. in a high promontory. Of this curve or bay we have received a better knowledge from the already frequently mentioned Japanese maps; it is dotted on Golownin's map and named the *Bay of Sana*. (The fort of *Sjana* or *Sana* does not however lie in the bay, but to the S. of the promontory). It is 25 English miles wide and 10 deep, and ends in a lake named *Seppo*, and with low land, an isthmus of scarcely four Engl. miles broad. To the W. it offers an anchorage screened from the wind. We have given it the name of *Bay of Seppo*, because that of *Sana* is inexact. The promontory consists of a mountain-chain with two summits of which the E. is the highest. This *two-hilled mountain*, which could be seen at a distance of 25 or 26 miles, was named *Cape de Trou* by the Commander; it is the cape *Ika-banots* of Sakusajemon's map. On the 30th June, lat. 45° 54' N. *Cape de Trou* lay E. by S. $\frac{1}{4}$ S. 15 miles, and the *Boerenschuer* S. E. 15 or 16 miles, and at noon of the 2nd July at the lat. by account 44° 56', the

Croonberck S. E. $\frac{1}{2}$ S. $2\frac{1}{2}$ miles, the *Gehackelde* (*Rugged*) *mountain* in the S., the *Boerenschuer* E. S. E. $\frac{1}{2}$ S. *Cape de Trou* E. N. E. $\frac{1}{2}$ N. There still remains to determine the geographical position of *Cape de Trou*, which appears still doubtful, although this coast has been examined by our navigator Vries, by Lapérouse (August 18th and 19th, 1787) and by Broughton (from 8th to 11th Oct. 1796), and though this far projecting promontory is very accurately shown on the maps of Sakusajemon and Toknai. By Lapérouse it is placed at the lat. of $45^{\circ} 39'$, which agrees with his observation of the 19th of August, when he was at a distance of 41' to the N. of that promontory, at $46^{\circ} 20'$. Broughton, who at noon of 9th Oct. was at $44^{\circ} 31' 30''$ N. Lat., sounded the Peak S. 52° W., and the island of *Sikotan* S. 17° E., and saw high land from N. 48° E. to 61° E., which he regarded as an island; he steered N. E. to examine it. In the afternoon at a distance of 4 English miles he passed the *Croonberck* which he has admirably described,* and at sunset sounded this volcano S. 24° W., and the coast as far as he could see, N. 55° E. Stormy and foggy weather only allowed him a glimpse of the coast the next day, and

*"We were abreast of a hill which rose from the sea shore, with a steep ascent to a considerable elevation of a conical shape and evidently volcanic. We passed within two miles of it, and plainly perceived it covered with stones and cinders down to its base, as an eruption [had lately happened. Round the crater it presented ragged and misshapen points and some small shrubs were growing on the S. W. side very low down. This abrupt hill was connected with the islands by a low isthmus, which receded from it on each side, so as to form circular bays; and the land continued low to some distance." Broughton, *Voyage*, page 117.

the last land was discovered from S. 61° E. to S. 27° E. and "a low point" S. 8° W. This low point, which is placed on his original map at $45^{\circ} 7'$, von Krusenstern supposed to be *Cape de Trou*, and gave the geographical position of the supposed *Cape de Trou* the preference to that of Lapérouse and that of Vries according to Jausen's map. Broughton who approached very close to that cape on 10th to 11th Oct., could not see it on account of the dense fog, and the land that he saw extending on the morning of the 12th from S. 5° W. to S. 22° E., and which he regarded as a separate island, was the N. W. end of Staaten island, to which Lapérouse and his successor (as was said above) erroneously gave the name of *Cape Vries*. This was also confirmed next morning by his observations while in the middle of the N. entrance of *Strait Vries*. This digression we have been obliged to make to prove that *Cape de Trou* lies farther to the N. than the great hydrographer von Krusenstern supposed,* and in order to confirm the observation of Lapérouse and that of our Dutch navigator. Supposing that the lat. of the supposed cape *Vries* (our cape *Okkebets*) as given by Golownin, is correct, and as cape *de Trou* on Saksajemon's map, where the configuration of the coast deserves all confidence, only differs 6' from cape *Okkebets*, the cape in question would lie at $45^{\circ} 32'$ N., thus 6' more S. than as it is marked on Jausen's map; and according to Vries's observation on the 5th

* Le cap Trou est placé par $45^{\circ} 35'$ (must be $39'$) sur la carte de Lapérouse et par $45^{\circ} 10'$ (must be $7'$) sur celle de Broughton, la première latitude est certainement trop boréale." *Recueil de mémoires Hydrographiques*, p. 198.

August, when, at $45^{\circ} 43'$, he had his cape *Vries* S. W. 4 miles distant, and cape *Okkebets* would lie at $45^{\circ} 40'$, the latitude of cape *de Trou* is found to be $45^{\circ} 34'$ N. On Golownin's map that cape also lies at $45^{\circ} 22'$ N. Lat. The supposed cape *de Trou* of Broughton's map is *Cape Notero*, a low point, placed 20' more to the S. on Sakusajemon's map, but agreeing nearly enough with the geographical position ($45^{\circ} 7'$ N.) given by the able English navigator to his "*Low port.*"

The series of volcanoes intersecting *Jezo* in a N. E. direction, making itself known in the S. of *Kunasiri* by the *Tsinpa nobori* and rising in the N. of that island as a high peak (*Taj-Tsja nobori*), spreads itself farther out over *Jeterop*, where most of the summits forming promontories, or here and there standing alone, or at the borders of lakes, sunken funnels of extinguished volcanoes, show themselves as conical mountains and trachyte domes.

One may accept that all the mountains on *Jezo* and the Kurils which have the addition of *Nobori*,* are of volcanic origin, and thus we see *Croonberck* rise as *Fussanobori*, and in the bay of *Seppo* the *Hetó nobori* and *Horosju nobori*, and along the N. W. cape *Sjusi nobori*; *Itomatse nobori*, *Kitettse nobori* and *Sjokkn nobori*. The excellent map given us by Toknai of this island, on a scale of 24 centimètres to the equatorial degree, shows, from the configuration of the coasts—(here

* *Noboru* is an old Japanese word and means to climb up, to ascend, and *nobori* a height, a summit. The Japanese do not employ it for volcano, for which they have the word *Take*. Among the *Ainos*, according to Dawidon and Toknai, it is used exclusively for volcanic mountain, as: *Iusuan nobori*, sulphur mountain.

high promontories running far out and steep jutting points, there deep bays and mountain masses only joined by low tongues of land) — how it might be regarded as independant islands when seen from afar. This torn and broken island, narrow and more than 70 English miles long, gives us a clear idea of the subterranean powers which have thrown it up from the Ocean and of the force of the waves of the sea when lashed by the hurricane, as in the course of centuries they have washed out the rocks, hollowed the gulfs and bays, and covered the shore with sand through which rapid little rivers make themselves a way. From the coasts of this island consisting of such a succession of steep rocks and shallow bays and gulfs, the unequal depth near shore is easily explained, where according to the nature of the bottom we lead from 30 to 100 fathoms of black sand, shingle and stiff clay (*“paalground”*). Besides the *Piramyda* we find many small islands, rocks and cliffs spread about the coast, the position of which is but very imperfectly known. For these dangers one must keep a good look-out. With the exception of some shipwrecked sailors this island has not yet been visited by any European or other naturalists; of its Fauna and Flora we have as yet no scientific knowledge, its productions can only be partly deciphered from the communications of the Japanese as probably analogous with those of *Jezo* and *Kamtschatka*, its neighbouring S. and N. countries. And yet — I repeat it — for more than two centuries this island has borne the very respectable Dutch name of the *Staaten eiland*.

Vries Strait and the Company's-land (the island *Urnsp*). Sailing E. N. E. along the E. coast of

Staaten island, they saw on the 19th June, at the Lat. by account 45° 41' N., "a glimpse of land to W. and W. N. W. and then again it was covered with mist." This was the high, snowcapped land of "*Cape de Vries*," cape *Okkebets* and of the island *Urnp*. Vries was then in the middle of the S. entrance of the strait which separates *Jeterop* from *Urnp* and which now bears his name.

"Saw also about 5 hours after noon straight ahead to the N. a glimpse of a very high mountain which shone much with the snow," "found the depth of 30 fathoms stiff clay, directly after 46, 47 fathoms and, at a short distance, again 50 fathoms..." "drifted on at God's mercy to the N. W., heard continually the land-sea and great rushing of water and much screaming of cliff-mews." "Somewhat later in the day again got soundings in 50 fathoms, and cast anchor in 47 fathoms coarse sand bottom, let go our bower-anchor." "Then saw S. S. E. the tops of high mountains, but could not see the feet, though they seemed to be close to us; heard continually a great rush of water. "About 2 or 3 hours after breakfast the mist cleared up, and then we saw that we had anchored not more than $\frac{1}{2}$ mile from shore. Saw S. by W. 3 miles from us land, and N. E. by E. 5 or 6 miles from us the most northerly land we could discover. The noise of water we saw was occasioned by the rushing down of snowwater which fell down from several clefts in the rocks with great force. In many places the land was still covered with snow down to the water's edge; snow lay especially deep on the mountain. Saw a high, round mountain full of snow S. W. by S.

and a ditto S. W. by W. from us, somewhat more elongated than of one height, and were separated by a low valley round about which lay some small mountains, to W. two other round mountains, but they were above 20 miles distant. From the mountain S. W. by S. runs out a sharp point, to which we gave the name of *Cape de Vries*; could see no land to the N. W., believing we were now in the *Sea of Tartary*." "Were at the lat. $46^{\circ} 6'$."

We could not describe the anchorage of the *Castricum* better than by literally copying the words of the *Journal*; on plate 66 S. of *Witsen's* work "is shown the bearing of the *Compagnieslant*, as one lies $\frac{1}{2}$ of a mile from *Kruishoek*." (*Cross-point*). The summits of high mountains seen S. S. E. are the *Mineraelberch*, not far from the foot of which *Vries* had anchored. Hereafter we shall become better acquainted with it. The land S. by W. 3 miles off is *Cape van der Lijn*, and the most northerly land 5 or 6 miles N. E. by E. *Cape Schouten*, as he was $\frac{1}{2}$ mile distant from the *Cruishoek*. From the ship they saw to S. W. by S. the N. E. point (*Cape Seworosi*) and S. W. by W. the N. W. point (*C. Okkebets*) of *Staaten* island, the N. E. point of which was called *Cape de Vries*. The two round mountains seen at a distance of 20 miles W. of *Cape Okkebets* might be the above mentioned conical mountains near *C. Tosifuri*, named *Sjsusi nobori* and *Itomatse nobori*. The correspondence of the N. E. point of *Staaten* island with *Cape de Vries* has been put beyond all doubt by these soundings, and the preposition *de* we so often find placed before *Vries's* name in later times, may be explained from this name.

As repeatedly has been said, Lapérouse took the N. W. extremity of *Staaten* island for *Cape de Vries*, and also marked it with that name on his map. On our map of *Jezo* and the Kurils we have restored the name *Cape de Vries* to its right place, and we will give the N. W. extremity, now nameless, that of *Cape de Lapérouse*, doing in this manner homage to the great but unfortunate French navigator, who felt so much respect for the Dutch navigators.* Lapérouse was also the first who found this strait after Vries (Aug. 20th 1787). The anchorage was found to be at the lat. 46° 6' N. and 146° 48' 36" E. from Greenw., which with the above named correction of + 3° would be 149° 48' E. from Greenw., and agree pretty accurately with the observations of Golownin, who determined the geographical position of *Cape van der Lijn*, which lies about 3 miles S. by W. of the anchorage, at 45° 39' N. lat. and 149° 34' E. Long. "*Between the ship and the shore found (Coen) a rising bottom, ¼ mile from shore 30 fathoms sandbottom, a musket-shot from land 19 fathoms stony bottom.*" "*Had much bad water here*" and "*lay here surrounded by many dangers.*" No better anchorage could however be found; but coming on shore they found a good place for fetching water. Spring appeared to be just beginning here (June 20th), the alder-trees began to bud, the herbs † to grow and

* La navigation du capitaine Vries (Vries) est la plus exacte qui ait pu être faite dans un temps, où les méthodes d'observation étaient très-grossières.

† Among others "*sorrel, just the same as grows at home.*" *Here on shore grow leaves with thick hollow stems, which are altogether*

blossom and the lark sang delightfully. Some red foxes and one snow-white one were seen; there were also some traces of human beings, such as a hut and a skeleton, but no inhabitants.

The high mountain where earth was found "*which seemed very mineral and to contain silver,*" Vries named the *Mineraelberck*, and took possession of that land (which he thought to be an island near the coast

9 fathoms long. These leaves are found floating in quantities in sea, being closely interwoven; under these long leaved weeds are seals by thousands, as also lammetje and divers." It seems exaggerated and incredible to speak of leaves 50 feet long; and yet it is true. This weed can be no other than the *Fucus esculentus* Lin., which is also found on the shores of *Jezo* and is full 50 feet long and one broad. It frequently grows close to the shore and is to be found everywhere in the sea of *Ockots* as drifting seagrass. A variety with hollow stems has also been observed, described by Agardh (*Species Algarum*, I. p. 143.) as *Alaria fistulosa*, and lately shown by Dr. E. J. Ruprecht to be a sort of his *Phasgonum*. This botanist has also described the *Fucus esculentus* very accurately as *Phazy. alatum* (v. Middendorff's *Siberische Reise*, Vol. I, pt. 2. p. 353 sqq.). Erman found toru pieces of this seagrass on the shore of *Ockots* which were more than 50 feet long. It serves the *Phoca nautica* as food, and in time of need is eaten by the *Sea Tungus* (*Reise*, III. p. 48). The *Fucus esculentus*, named *Kombu*, is generally eaten in *Japan*, has a very pleasant taste and is noted as being very wholesome and nutritive. Toknai, a venerable old man of 72, assured the writer that it was from the use of that seagrass during his many years residence at *Jezo* and *Kraflo* that he was indebted for the preservation of his health. This observation may serve as a hint for navigators. The Chinese also prize this sort of *Fucus*. The annual exportation of it from *Nagasaki* to *Shanghai* amounts to 51,000 pikols, at a prime cost of 170,000 taels or about £ 30,000 (*Nippon VI, Vom Japanischen Handel*, p. 52.) At *Jezo* and the *Kurils* there are seaweed fisheries which are encouraged and protected by the government.

of *America* *) on the 23rd of June, in name of the Company, giving it the name of *Compagnyslant*. †

As early as the end of the 6th cent., the Japanese had become acquainted with the southern part of *Jezo*, which they called *Watari simano Jezo*, i. e. Ferry island of *Jezo*, because at that time the northern part of *Nippon* was called *Jezo*. The *Kurils*, that is to say

* As is well known it was believed even at the beginning of the 17th cent. that America was only separated by a narrow strait, *Fretum Anian*, from the Mogul empire, the N. E. extremity of the old world. On Jansson's map and on that of "*Gedaene Coursen*" (Atlas N^o. 11 E.) the *Compagnyslant* is shown as an extensive country without end. On the map of *Gedaene ontdeckinghe onder den Commandeur M. G. Vries*, however, the *Compagnyslant* is drawn as an island, and divided by a strait from an extensive region, on which stand the words "*Americae Pars*;" in the strait is written "*Here the Yacht Brekens has been*." It is therefore to that vessel we are indebted for the recognition of the *Compagnyslant* as an island. The Russian officer Spangberg sailed round it in 1739. The narrow tongue of land running out to the W. from the supposed part of America, is most probably *Simushir*, the XVIth of the Russian *Kurils*. On the map of *Japan* belonging to the *Verhandeling over de Nederlandsche ontdekkinge* (Essay on the Netherland discoveries) by Bennet and van Wijk, we find to the S. W. of that island two small islands, *Rond island* and *Heavel island*, which were probably also discovered and so named by the ship *Brekens*. They are now called *Broughton's Island* and *Tsirpoi*.

† The taking possession of *Urup* is too important a fact not to be given here literally from Coen's Journal. "Reported all I had seen to the Commander, then accompanied him to a steep table mountain and coming there the commander raised up a wooden cross on a high hill, on which cross stood the following: *1643*. Have thus taken possession of this land in the name of our Hon. masters, and given it the name of *Compagnyslant*, and named this point *Cruishoek*. Have eaten and drunk on the *Compagnyslant*, and then fired three salvos with muskets in honour of our Hon. masters."

the most southern, which they named *Figasi Jezo*, or *East Jezo*, were not discovered until the year 1672 by a Japanese coaster, accidentally driven thither by storm. The Russians became acquainted with them soon after their establishment at *Kamtschatka*, and, as has been said above, they were examined by Spangberg and Walton in the years 1737—39. At the beginning of this century, hunters (*Promuschlenike*) of the Russian-American fur-company, sometimes went over to *Urup*, which, on account of the many sea otters * that congregated there, is also called *Rakkosima* by the Japanese. About the year 1840 the Russians carried on a barter on that island with the *Ainoes* and the Japanese who came there to fish, which trade seemed to be tacitly allowed by the Japanese government. In 1854 (September 3rd) two French frigates belonging to the squadron dispatched to *Kamtschatka* by the allied Western naval powers, took possession of the island of *Urup*, "the seat of the Russian trade on the Kurils", and gave it the name of "*Alliance*." *Urup* was as yet no Imperial Russian territory, — it actually still belonged to *Japan*, and is marked as such on Sakusajemon's map. But the Russian ambassador, admiral Putiatine, happened just then to be at *Japan*, and had offered to the court of *Jedo* a treaty of peace and commerce, in which the emperor Nicholas had proposed that: "the boundaries between *Russia* and *Japan* shall be between the islands of *Iterup* (*Staaten island*) and *Urup* (*Compagnie island*)." According to Art. 2 of the treaty con-

* *Enydris marina*, called *Rakko* by the *Ainoes* and Japanese, and *Rakku* by the *Kamtschadales*.

cluded in 1856 between *Japan* and *Russia*, "*Urup* belongs to the possessions of *Russia*." And as we have lately heard, a concession has been not long since granted to the Russian-American Company, to work the copper mines discovered on that island. Such is the history of the neglected *Compagnyslant*.

Urup stretches N. E. and S. W., and, according to the observations of Golownin, reaches from *Cape van der Lijn*, $45^{\circ} 39'$ N. and $149^{\circ} 34'$ E., to *Cape Castricum* $46^{\circ} 16'$ N. and $150^{\circ} 22'$ E. From *Cape Castricum*, according to Sakusajemon's map, there also stretches a promontory N. E. 6 Ri far. On Golownin's map it is marked as much shorter and ending in rocks. Von Krusenstern reckoned the whole length of this island at 54 English miles, which agrees pretty accurately with the already mentioned original Japanese map. The whole shape and configuration of the coast is also just the same. In the south, one observes the high *Mineraelberch*, *Kabiop*, behind which the coast runs in and forms a bay, and a series of conical mountains along the northern part of the W. side, ending in a promontory *Cape Nobu* (*Castricum*). On the E. coast there are also some bays, among which that of *Wanan*, situated about the middle, appears to be a good harbour.

We will also remark that the "*steep Cliff* (S. S. W. $3\frac{1}{2}$ miles from the anchorage) which lies at about a musketshot from land, and is like a pyramid and was full of mews, was so steep that it was not possible to climb it; this cliff was full a musketshot high," was seen by Golownin when $\frac{1}{2}$ English mile distant from the S. point of *Urup*; the reef however, as

given on Jansson's map, was not observed. Golownin and Ricord, who passed three times through *Strait de Vries*, tell us nothing about the current in this strait. On Sakusajemon's map it is marked in the middle S. E. According to the observations in the Journal of the 5th August, "with a steady N. wind the swell was very heavy, rolling through the strait from N. N. E." On the other hand the mate Coen, on the 20th June, believes that they were "drifted first to the N. W. and then to the N." The wind was then variable, but the prevailing one of that season was S. E. and S. W.; whence it may be inferred that the wind exercises a real influence on the current in this strait, and that, as in those seas southern winds generally prevail from May to August, and northern winds from August to May, the current is to the N. during the first three months and afterwards to the S.

From here Vries steered N. and N. W. up to lat. 47° 27' N., where he determined to return to the S. Had he continued this course any longer, he would have lost his way in the sea of *Ochots*. So doing he examined the coast of *Jeterop*, discovered the strait which divides that island from *Kunasiri* and then opened the way along the N. coast of *Jezo* for the discovery of the bays of *Aniwa* and *Patientie*, the S. and S. E. part of the so called Peninsula of *Saghalien*, which, from the important researches of a Japanese, *Mamia Rinsó*, we at a later period find recorded in the history of geography as an island under its true name of *Krafto*. The results of the voyage along the W. coast of *Jeterop*, and of the observations taken at the anchorage off *Vossen-Island*, at the western en-

trance of *Strait Antony van Diemen*, we have already made use of in the hydro-geographical description of that island and strait.

On leaving his anchorage off *Vossen-Island* on the 11th of July, Vries steered N. N. W., but was however so retarded by a "stiff vehement stream" that he made but little way. This current running E. S. E. — towards the strait — gradually diminished, and at a distance of 9 miles S. by E. from *Peak Antony* was no longer perceptible. At the lat. by account of $45^{\circ} 26' N.$ "they steered a *W. S. W.* course, to see if they could not again find land by that course." They got 80 fathoms stiff clay, afterwards 60 fathoms black sand; farther on 50 fathoms fine grey sand and observed some traces of stream.

At noon of the 14th July they were at lat. by account, $45^{\circ} 39'$, and determined to make the land from which, from the shoaling of the ground, they could not be far distant. For 3 German miles they steered N. in from 46 to 42 fathoms of fine grey sand soundings and then at 4 o'clock in the afternoon they saw high land W. by S. This land "stretched from N. N. E. to N. N. W. from us, was in some places, between the high land, united by low land; the nearest point lay 4 or 5 miles from us; was 35 fathoms deep was, fine oozy sandground. Saw soon after 2 high mountains, and there lay what seemed an island E. by N. about $10\frac{1}{2}$ miles from us."

Strait de Lapérouse. From the 13th to the 14th of July, Vries was in the middle of the strait which separates *Jezo* from *Krafto*, and which was only discovered 144 years later (August 11th 1787) by Lapérouse, and has been named after that great navigator. They "saw some traces of stream," and "it seemed that there

was a stream running here, but on account of the stiff gale could remark but little of how it ran." From the mist covering the low coast and from the tops of some mountains appearing W. by S. up to the N. N. E., that able seaman was misled to suppose that the land to the W. was connected, and to seek a passage through the gulf which runs in deep to the N.; "had seen much rush, vegetables and wood floating about; did not know whether we were in a navigable passage or in a gulf."

According to the soundings taken at 4 o'clock P. M., July 14th, Vries was already in the *Gulf of Aniwa*, 4 or 5 miles E. by N. of the high mountain (*Horobori*), which runs out in a promontory (*Notoro*), named *Cap Crillon* by Lapérouse, and forms the W. and S. boundaries of the *Gulf of Aniwa*. On our map of *Kraflo* (*Atlas* No. 3) we have already recognised *Horobori* as *Blydeberg*, which must have been the high land seen by Vries W. by S. * The land that stretches farther from N. N. W. to N. N. E., is the mountain chain called *Poortlandt*, extending W. from the gulf to *Pic Bernicet* of Lapérouse, and to the right of *Zalmbaai* northwards, and bearing, on Toknai's original maps, the names of *Okosjó* and *Niwajemesi* (*de Speenberg*, Vries?). The two high mountains soon afterwards seen E. by N. at 10½ miles distance, having the appearance of an

* On the map of *Japan*, belonging to the above mentioned essay of Bennet and van Wijk, the name of *Blydeberg* is applied to *Pic de Langle*. On all the original maps of Vries's voyage, *Blydeberg* lies at least 50' more N. than the isle of *Risiri*, on which that peak is situated. Nor can the before mentioned soundings by any way be brought to agree with it.

island, are the conical mountains *Hóru* and *Serikai*, both belonging to the chain which forms the E. boundary of the gulf, and the S. extremity of which is named *Siretoko* (*Cape Aniwa*, Vries). Both these capes, *Cape Crillon* (according to von Krusenstern at lat. $45^{\circ} 54' 15''$ N. and $141^{\circ} 58'$ E. Long.) and *Cape Aniwa* ($46^{\circ} 8' 20''$ N. Lat. and $143^{\circ} 30' 20''$ E. Long.), are the N., and *Cape Soja* ($45^{\circ} 31' 15''$ N. Lat. and $141^{\circ} 51'$ E. Long.) the S. boundary of the strait of Lapérouse, which is 23 English miles broad at the western entrance. Besides cliff *La Dangereuse*, 10 Eng. miles S. E. of *Cape Crillon* at lat. $45^{\circ} 47' 15''$ N. and $142^{\circ} 8' 15''$ E. Long., and which is so called because it is on a level with the surface of the water, Lapérouse and Krusenstern found from 23 to 25 fathoms rocky ground with small stones, at a distance of 2 or 3 Engl. miles from it. Both these navigators also observed a strong current (von Krusenstern in the middle of May to the E.); Lapérouse remarks that the current ran harder on the N. side of the strait, the side of *Krafto*, than on the S. side, that of *Jezo*. The depth in the middle of the strait, at the W. (the narrowest) entrance, observed by Lapérouse and von Krusenstern, was 36—42 fathoms rocky ground with small stones. Vries sounded 80 fathoms stiff clay at the E. entrance and farther 70 of fine sand. His depths to and in the *Gulf of Aniwa* are greater than those which von Krusenstern has published. As these observations lie at the difference of a century and a half from each other, we may reasonably offer the suggestion as to whether that difference may not be owing to a rise in the bottom of the strait, which separates

a chain of continually active volcanoes? This problem does not belong solely to the province of geology; it most certainly belongs to hydrography and here, as in all volcanic countries, should be taken into account by navigators. When sailing for the W. entrance of the strait, coming from the south, the islands of *Risiri* and *Refunsiri* serve as landmarks, the former with its high peak, which can be seen 50 Engl. miles out at sea; — from the N. the island of *Toto mosori* (*I. Monneron*, Lapérouse). *Risiri* lies at $45^{\circ} 11' N.$ Lat. and $141^{\circ} 12' 15'' E.$ Long.; it stretches N. N. W. and S. S. E. from the coast, about seven Engl. miles long and three or four broad; the E. side is steep, rocky and appears to be unfruitful; the W. side runs down more level, is also surrounded with rocks, here and there covered with a luxuriant vegetation, and with its variation of green spots and woods affords an agreeable sight. The *Kegelberg*, the volcanic action and crater of which can be plainly seen, is rocky and barren, and partly covered with snow even in the month of May. The W. and N. W. coast has some coves, *Toto tomari* and *Benkaï tomari*, which are inhabited and in which are Japanese guardhouses. At the N. end there is also a hamlet of the *Ainoes*, and a guard, *Nakkatomari*, and (according to Toknai) on the N. E. coast a bay *Otsutsi tomari*, into which a small river *Kusjónaï* falls. From this bay there runs a road to *Toto tomari*. The Japanese frequently anchor in this bay on their way from *Matsmaë* to Cape *Soja*. When seen at a distance of 24 Engl. miles S. W., this island appears like a conical mountain rising out of the sea, on which, even in the summer, the snow-filled furrows may be

seen. * *Refunsiri* lies at a lat. $45^{\circ} 27' 45''$ N. and $141^{\circ} 4'$ E. Long., stretches N. b. E. and S. b. W. and is about 10 Eng. miles long and four or five broad, surrounded by steep rocks, hilly, rising at the N. E. end into a mountain (*Cape Guilbert*), which is however low in comparison with the *Peak of Risiri*. On the E. side, about the middle of the island, there is a creek *Toit-subeki*, on which is an *Aino* village and a *Japanese* guardhouse, as also a sheltered anchorage for *Japanese* ships. On the N. side the coast also bends deep inwards, forming a basin like a lake. Both islands were formerly more inhabited by the *Ainoes* than now. The channel between the two islands is clear, as also between them and the W. coast of *Jezo*. Coming from the N. the small low island of *Toto mosiri* (i. e. Walrus island) serves as a beacon. It lies at the lat. $46^{\circ} 9'$ N. and $141^{\circ} 15'$ E. Long., stretches 7 Eng. miles N. and W., and is (according to Lapérouse) about 18 Eng. miles distant from the coast of *Kraflo*. Lapérouse and Broughton passed between that island and the coast and found no less than 50 fathoms of water; the latter however did not see it. It is necessary therefore in foggy weather to be very prudent here, the more so as the distance of the island from the coast of *Kraflo* has not been exactly fixed. When *Toto mosiri* is passed one can see the peak of *Risiri*. The E. entrance of the strait is marked by the high mountains of the E. coast of *Kraflo*, which at the lat. $46^{\circ} 8' 20''$ N. and $143^{\circ} 30' 20''$ E. forms the S. and E. extremities of that island, *Siretoko*, called by *Vries* *Cape Aniva*.

* Von Krusenstern, *Reise um die Welt*, Atlas, N^o. LXXI and LXXII.

This cape has the appearance of a steep, rugged rock with a deep cloven point. According to Toknai's map some rocks lie out beyond the cape. Von Krusenstern, who doubled the cape at a distance of from 5 to 8 miles, found the track clear and sounded 75 fathoms clay.

The Gulf of Aniwa. To Vries we are indebted for the discovery and first knowledge of this gulf, to von Krusenstern for the confirmation of the discovery and a closer geo-hydrographic examination. The Japanese geographers Mogami Toknai and Mamia Rinso have acquainted us more particularly with the configuration of the coasts, their promontories, bays and creeks, with the rivers and streams which run into them, with the lakes and mountain chains and with their native names. But it is not only an intimate knowledge of this gulf we owe to them, for these indefatigable travellers have also made us acquainted with by far the greater part of *Krafto. Saghalien*, formerly so little known, and long supposed to be a peninsula, has been as it were torn off from the continent of *Asia* by their researches, and they have opened to us the interior of a *terra incognita*. Compare the best European map of *Krafto* that exists, the *Carte de la Presqu'île de Saghalin*, 1827, * composed by von Krusenstern from the observations of Vries, Lapérouse, Broughton and his own important discoveries, with our map "*die insel Krafto und die Mündung des Mankó (Amur) nach Originalkarten von Mogami Toknai und Mamia Rinzo*," † and the

* Atlas de l'Océan Pacifique, par de Krusenstern, N^o. 25.

† Von Siebold, Atlas von Land- und Seekarten l. e., N^o. 3. I will here remark that the only existing copy in *Japan* of Toknai's

longest island in the world lies open before our eyes; an island that, by our means, according to art. 2 of the treaty concluded between *Russia* and *Japan*, is declared neutral, and thus from this moment not only open to the commerce of the whole world, but also rendered capable for colonisation by means of a new population.*

In the supposition that the land was closed to the W. and no passage was possible, Vries had continued his course N., at a distance of 4 miles from the shore, which he named *Poort Landt*. He guessed himself at lat. 46° 30' N., at a depth of 23 fathoms stiff clay. He now steered N. E., and so continuing with shoaling depth up to 16 fathoms stiff clay, he came to anchor. On the 16th July "*in the morning it was misty weather, but clearing a little up, we found ourselves in a large bay.*" The boat was sent off to examine the anchorage somewhat nearer in shore, when 10 fathoms stiff clay was found within 1/3 mile of the shore. At

"Original M. S. Maps of *Jezo*, the *Kurils*, *Krafto* and the *Amur*," was given to me at *Jedo* by the traveller himself on the 16th April 1826, on condition I should not publish it within 25 years. Notwithstanding his great merits for a knowledge of the northern lands subject to *Japan*, the venerable old man had, then in his 72nd year, fallen into disgrace and was plunged in poverty and misfortune because he made no secret of his discoveries, was too sincere and old, and yet was too proud to bend. It was thus that his invaluable maps came into my possession, and were only published in 1852.

* "Art. 2. The boundaries between *Russia* and *Japan* are in future between *Iturup* and *Urup*. The whole island of *Iturup* (*Staateland*) belongs to *Japan*, the island of *Urup* (*Compagnieland*) with the N. *Kurils* to *Russia*, while the island of *Krafto* (*Saghalien*) is neutral ground between the two empires." *Journal de St. Petersbourg*, 28 Avril 1857.

first they dropped the anchor farther in to land in 6 fathoms stony bottom, but as it would not hold and it began to blow off land, they sailed back and anchored in 9½ fathoms stiff clay, sounding the village of *Aniwa-Tamary* (*tamari* = dwelling) N. E. ½ mile. "Were now at the Lat. by account of 46° 40'." This bay was called "*Salm bay*" (Salmonbay) because they here amply provided themselves with salmon. On the beforementioned map of "Gedaene Coursen" we read: "*Here come many natives on board, who will persuade them that there is abundance of silver to be got among the mountains; they also set a higher value on iron than on silver.*" Remarkable accounts of the natives with whom our navigators came into contact are also communicated in the Journal. Of this we will speak farther hereafter.

Before the discovery of the Journal, and before we had inspected the two above-cited maps of the "*Atlas van geteekende Land- en Zeekaarten*" preserved in the colonial office, our knowledge of the Gulf of *Aniwa* discovered by Vries, rested on the map of Jansson and on some detached notices and memoranda of his memorable voyage by Nicolaes Witsen and others. With respect to geographical determinations however these were very defective. Von Krusenstern had only a copy of Jansson's map on board, on which the mouth of the river which falls into "*Salm bay*" was placed at the lat. 47° 35' N. "Es scheint fast unglaublich," exclaims the great hydrographer, "wie man einen Fehler von 52 Minuten in der Breite hat begehen können." *

* Von Krusenstern, Reise um die Welt, Th. II, pag. 68.

But did Vries really make such an error of 52' in the latitude? Most certainly not! The anchorage of the *Castricum* was fixed by him to be *by account* at $46^{\circ} 40'$ N. Lat., and that was $\frac{1}{2}$ mile S. W. of *Aniwa Tamary*. The anchorage of the *Nadeshda* was determined by von Krusenstern, *by observation* at $46^{\circ} 41' 15''$ N. Lat. and $142^{\circ} 33'$ E. Long., at a distance of $2\frac{1}{2}$ English miles S. 49° E. of the Japanese factory. As now the anchorage of von Krusenstern was at most 3 minutes more N. than that of Vries, the difference between the latitude determined by the Dutch navigator *by account* in 1643, and that *by observation* of one of the most famous hydrographers of the present century, is only 2 minutes. If to this we add Vries's observed lat. of July 19th, $46^{\circ} 27'$ N. "*the steep point to the East of Tamary then bearing N. W. $\frac{1}{2}$ W., $2\frac{1}{2}$ miles distant, to the N. the land lay $2\frac{1}{2}$, to N. E. 3 miles, E. 5 miles, to the S. E. by S., the farthest point we could see, 8 miles from us and to that point we gave the name of Cape Aniwa,*" and find from this astronomical and compass observation of Vries, that the "*steep point to the East of Tamary*" lies at $46^{\circ} 37'$, and that that point is 4' more S. than von Krusenstern's anchorage, — then no difference any longer exists respecting the geographical position of *Salmbay*, as determined by our two navigators. And if we take into consideration the latitude by account of the following noon (20th July), where Vries reckoned he had sailed S. by E. $6\frac{1}{2}$ miles and was at $46^{\circ} 1' 30''$, and *Cape Aniwa* E. S. E. 3 or 4 miles distant, we shall have to fix the geographical position of *Cape Aniwa* at $45^{\circ} 59'$ N. Lat., which gives a difference of $3' 20''$ with the repeated astronomical

von Krusenstern, according to whom this cape is at $46^{\circ} 2' 20''$ N. Lat. The bay or creek named *Tofuts*, E. by S. of point *Tamary*, and a steep rock called *Piramyda* on Vries's maps, and *Takatsuka* (i. e. high tomb hill) on that of Toknai, which von Krusenstern could not see on account of the dense mist, exist as testimonies of the accuracy of Vries's observations and at the same time of the fidelity of the *Japanese* maps. Rightly therefore did Lapérouse say, when criticising the observations of our navigator in the *Gulf of Aniwa*: "*précision étonnante pour le temps où fut faite la campagne du Kastricum*;"* and not less flattering is the exclamation of von Krusenstern, when in 1834 I showed him, on the maps of Toknai and Rinso, the straits dividing *Krafto* from *Amurland*: "*Les Japonais m'ont vaincu!*"

The *Gulf of Aniwa*, which is 90 Engl. miles broad and 70 deep, and, as far as we have examined it, free from dangers, offers a roomy and at the same time safe anchorage, along the coasts enclosing it E. and W., and in the so called *Salmbay*, in which it ends. It offers from 45 to 10 fathoms stiff clay (*steekgrond*) soundings, regularly shoaling up to the shore, where the bottom is rocky with small stones. Von Krusenstern could not accurately observe the time of high water at new or full moon; he believes however that it is about 5 o'clock. The mate Coen says: "*The water rises a fathom here (Salmbay) on and off, several times a day.*" Land- and sea-breezes also blow regularly here in the evening and morning. Vries observed stiff landbreezes,

* Voyage de Lapérouse l. c., Tom. III, page 93.

and von Krusenstern a fresh seawind. The stream running E. in the middle of *Strait Lapérouse*, is not felt on the coast of the gulf; just as on the N. coast of *Jezo*, there seems to be an E. and W. stream, changing with the seasons. The deviation of the compass at the E. entrance of the gulf (1805) amounted to $1^{\circ} 11''$ E. At the time of Vries's visit the gulf was inhabited only by *Ainoes*. In the beginning of the 17th cent. indeed, the prince of *Matsmaë* on *Jezo* had repeatedly undertaken an expedition from *Cape Soja* to *Krafto*. The Japanese wintered there, but however returned after a lapse of some years. The first communications respecting *Krafto*, also called *Kita-Jezo* or North *Jezo*, we owe to the *Japanese* geographer Fajasi Sivei. * From him it appears that, as early as the beginning of the the 18th cent., there was a commercial communication from *Jezo* with that country, and that they were then already acquainted with 22 *Aino* villages. It was supposed that this land was separated from *Santan* and *Mantschu* by a high mountain chain, and it was asserted that the rapid stream, and the cliffs and shoals in the strait between *Jezo* and *Krafto* made the navigation thither very dangerous. An island *Sagalin* (*Saghalien*) is given on Sivei's map, just opposite the mouth of the *Amur*, just as that island is also placed on the *Chinese* maps. On the before-mentioned map of *Fukutsi Kensok* *Krafto* is already marked as an island, and the course from *Soja* to *Siranusi* laid down. *Krafto* only became better known to the Japanese after August 1785, when *Mogami Toknai* put over from *Soja* with

* *San-kok-tsu-ran-dzu-ki* and Klaproth's translation, page 187.

a Japanese merchantman to *Sirannusi*, not far from *Cape Crillon*, and from that time it has been visited by merchants under the superintendance of the government. The fisheries and the fish-trade have kept up an animated intercourse up to the present day, between *Jezo*, *Japan* and the gulf of *Aniwa*, and has gradually become an inexhaustible and indispensable source of subsistence for the increasing population of the empire of *Nippon*.

The Bay van Patientie. After doubling *Cape Aniwa* (July 21st) Vries steered N., and afterwards N. W., and farther N. W. b. W., and "soon after *W. N. W.* to try to come round the *W.*; had bad water. Counted at noon to have sailed *N. W.* $\frac{1}{2}$ *W.* 11 miles, were therefore at the lat. of $46^{\circ} 28'$. About 4 o'clock P. M., saw the coast of *Eso*, and there was a steep rising point, with low land stretching to the N., resembling a tunny head; gave that point the name of *Tonyu's* (Tunny) point. Said point lay *W. S W.* 1 mile distant from us. Had sailed since noon 5 miles *W. N. W.*; found soundings 44 fathoms stiff clay, and soon after 58 fathoms." Vries was then on the E. coast of *Krafto*. From *Cape Aniwa*, which is as it were the extremity of a tongue of land formed by a high mountain chain, the E. coast is characterised by four promontories of which the most S. and smallest is named *Tsisinoje* on Toknai's map, the next, greater, *Hontob* (*Cape Löwenorn*, *Krusenstern*), then again a small projecting point *Niteosi* and a large one with a promontory running to the N., the S. extremity of which bears the name of *Wojakutsi* and the N. *Ajerub*. Von *Krusenstern* has given that N. extremity the name of

Cape Tonym and determined the geographical position of it at $46^{\circ} 50'$ N. lat. and $143^{\circ} 33'$ E. long., and that of *Cape Löwenorn* at $46^{\circ} 23' 10''$ N. lat., and $143^{\circ} 40' 20''$ E. Long. This cape is a steep projecting rock, differing from the other rocks and distinguishable from them by its yellow colour. Judging from Jansson's map and that of the "*Gedaene Ontdeckinghe*" (*Atlas von Land- und Seekarten*, N^o. 11, D), *Tonym's Point* must lay more to the south and the extremity must be *Hontob* (*Cape Löwenorn*). If on the other hand we take the lat. by account of July 23rd, on board the *Castricum*, $46^{\circ} 28'$ N., adding five miles with a W. N. W. course, and the distance from *Tonym's Point* 1 mile W. S. W., — this point will then be about $46^{\circ} 47'$ N. lat., and therefore 24' more N. than *C. Löwenorn* and 3' more S. than *C. Tonym*, Krusenstern. On our map of *Krafto* (*Atlas*, N^o. 3) we have already given the name of *Tonym's Point* to the S. extremity, *Wojakutsi*, which lies about 6' or 8' more S. than von Krusenstern's *C. Tonym*.

The low land "3 or 4 miles N. of *Tonym's Point*," is doubtless the bay which stretches in a N. W. direction from *Ajerub* (*C. Tonym*, Krusenstern), to *Notsuitoko* (*C. Seniavin*, Krusenstern) and named by Krusenstern *Mordwinoff's Bay*. The Japanese travellers above mentioned have made us better acquainted with this bay, and we see there a deep creek and a large lake, *Omutó*, running into the sea by a river, and opening a communication with the *Gulf of Aniwa* by means of another river and three smaller lakes more to the south, *Tsisikusitó*, *Hotoma* and *Tófuts*. This communication is very useful for the inhabitants of the whole

E. coast of *Krafto* up to "*Bocht Patientie*," because they are relieved from the necessity of doubling *Cape Aniwa* with their small vessels, when they wish to go thither for commerce. (Compare *Atlas*, N^o. 3.)

July 24th. "*We continued our course to N. N. W. At noon accounted we had sailed N. $\frac{3}{4}$ W. 15 miles and therefore to be at the lat. 47° 27', but found ourselves at the lat. 47° 49', so that the stream had carried us about 3 miles farther N. than we supposed. As then the land lay S. W. b. W. 5 miles, and to the W. 6 miles from us. N. W. $\frac{1}{2}$ W. lay a high mountain with a sharp point on the top; we gave it the name of *Tepelberch*, and it lay 10 or 11 miles from us. Could still see land N. W. b. N. which seemed to stretch still farther N. Had then a depth of 55 fathoms stiff clay (*steekgront*)." According to these observations and reconnoissance our navigators were between *Cape Seniavin* and *Cape Muloffsky*, *Krusenstern*, which, on *Toknaï's* map, bear the names of *Notsnitoko* and *Sjojunkotan*, the former being placed by von *Krusenstern* at 47° 16' 30" N. lat. and 143° E. long., the latter at 47° 57' 40" N. Lat., and 142° 44' E. Long. About the middle of this part of the coast the land is lower, falls off to the W., and forms a bay where the largest river of the E. coast, the *Naifuts*, throws itself into the sea, while the mountain chain which stretches S. W. and N. E., and which led von *Krusenstern* to suppose that there was a passage there, is the mountain range through the valleys of which this river flows. The mountain which *Coen* named *Tepelberch*, is probably the same which is named *Speenberg* on all the other maps of *Vries*. We regarded the *Speenberg* as the *Ni-**

wajemesi, on the right bank of the *Naifuts*. Von Krusenstern, who describes it as a high rounded mountain, and places it at lat. $47^{\circ} 33'$ N. and Long. $142^{\circ} 20'$ E., thinks that it might be Peak *Bernizet*, seen by Lapérouse on the W. coast, and which, according to Lapérouse, is at lat. $47^{\circ} 25'$ N., and $142^{\circ} 21' 20''$ E. Long. As in the Journal the distance of the *Tepelberch* (*Speenberg*) is given at 10 or 11 miles, it cannot well be a mountain on the E. coast, as *Krafto* is here (at Lat. $47\frac{1}{2}^{\circ}$ N.) not more than 30 English miles broad. On the Japanese maps there are two peculiarly characterised mountains, the already mentioned *Niwajemesi* and the *Tokitaë*. It is not improbable that the first is the *round mountain* seen by von Krusenstern * after doubling his *Cape Tonyu* (Ajerub), and the other that of which it is said in the Journal (July 24 at noon): "*W. b. N. we saw some mountains, on which were summits like flat topped steeples.*" *Tokitaë*, which is characterised by two conical shaped summits, is at about $47^{\circ} 50'$ N. Lat., just in the bay to the S. of *Cape Muloffsky*, where the coast begins to stretch N. b. E. We wish also to draw the attention of navigators to some high mountains rather more to the N. on the W. coast of *Krafto*, which can probably be seen from the E. side of that island. They are the conical mountains *Raitsiska*, *Jesijaran* and *Rijonai*, the first of which was named by Lapérouse *Pic de Lamanon*, and placed at lat. $48^{\circ} 45'$ N. and $141^{\circ} 56'$ E. Long., and

* Hinter dieser Spitze erhob sich ein abgerundeter Berg, an welchen nach Norden zu sich wieder hohe mit Schnee bedeckte Berge anreiheten. Von Krusenstern, *Reise um die Welt*, Th. II, p. 87.

the last, *Pic de Mongez*, about 38' more N. We have gone into more minute details respecting the mountains, because in these seas the low land is frequently covered with a dense fog, only allowing glimpses of the highest mountain tops, which must serve as landmarks.

Before leaving this coast however and sailing into the "great Bay of Eso," which opened to our navigators N. N. W. to E. S. E., we cannot leave it unnoticed that Vries observed there a stream, which, in 24 hours carried him 3 miles N.; and that to Von Krusenstern, when off *Cape Muloffsky*, the land had a much more pleasant aspect than the more southerly regions of *Krafto* and *Jezo*. * Although the situation of this coast to the E. and its being sheltered to W. and N. W. up to N. E. by high mountain chains may contribute much to producing a milder climate, we must not forget, that the *water streaming to the north from warmer regions* — a branch of the before mentioned *Japanese stream* — exercises as favourable an influence on this coast which it washes, as the warmed floods of the Atlantic Gulfstream which penetrate to the N. as far as Iceland. We also repeat our hypothesis, that the continual mists which prevail in those regions are pro-

* "Das ganze Land gewährte uns einen viel angenehmeren Anblick als jene südlicheren Länder die uns seit unsern Absegeln von Japan zu Gesicht gekommen waren, die weissen, schroffen Ufern mit ihren Einschnitten, Berge hinter ihnen von mässiger Höhe in verschiedenen Gestalten und mit dem schönsten Grün bedeckt, welche mit holzreichen Thälern abwechselten, gewannen uns ein sehr günstiges Vorurtheil für diesen Theil von Sachalin ab. Auch hat er unstreitig unendliche Vorzüge von dem, von uns später untersuchten, mittlern und nördlichen Sachalin." Van Krusenstern, *Reise um die Welt*, Th. II, pag. 92.

duced by the disproportion between the temperature of the seawater and that of the air, and continue during the greater part of the summer.

At the lat. (by account) of $48^{\circ} 25' N.$, where they saw the bay bounded by high land from W. S. W. to N. E., there lay W. b. N. $\frac{1}{2}$ N., at a distance of 8 or 9 miles "a high point, looking like an island, which was quite jagged on top and looked like a saw." This extremity is most probably the promontory formed by a mountain ridge, which stretches N. and S., running down at the sea-shore and appearing as if it stood quite isolated, and marked *Uri* on the Japanese maps. Von Krusenstern has named it *Cape Dalrymple* and placed it at lat. $48^{\circ} 21' N.$ and $142^{\circ} 50' E.$ Long. The coast which stretches from *Cape Muloffsky* N. b. E., takes a northern direction from *Cape Dalrymple*. As from the 25th to the 26th July Vries had followed a N. N. E. course, he could not distinctly see *Cape Soimonoff*, a high promontory, stretching far to the E., and which could be easily mistaken for an island. The land however that was seen at noon of the 26th July, $6\frac{1}{2}$ miles W., when Vries was at lat. $48^{\circ} 56' N.$, can be no other than this cape, which, according to the observations of von Krusenstern, lies at lat. $48^{\circ} 52' 30''$ and $143^{\circ} 1' 30'' E.$ Long. From this cape the coast again stretches more to the W. and forms a bay, which, on Jansson's maps and on that of "*Gedaene Ontdeckinghe*," is named the "*Bocht van Sainct-Jacob*;" in the Journal however it is not mentioned. The great river the *Boronai*, which rises in lake *Sánai*, then forms a basin in the center of the broadest part of *Krafto* at the lat. of about $50\frac{1}{2}^{\circ}$, surrounded by high snow-capped

mountains, * throws itself into the N. W. side of this bay in a delta-shaped mouth, and feeds two lakes which spread out wide to the right and left; it is this and the extent of its stream, that, seen from afar, appears like a deep bay. The mouth of this river was seen from on board the *Castricum*. Von Krusenstern examined the mouth of this river more nearly: "*Wir entdeckten zwei Mündungen, von welchen die nördliche, welche auch die grösste war, in N. W. 72° lag. Die Mündung dieses Flusses, welche ich die Newa nannte, ist über eine halbe Meile (English) breit. Sie liegt in 49° 14' 40" N. Br. und 143° 2' O. L.*" †

* The mountain range *Urussivi*, of which is said on Jansson's map: "*Mountains seen at 15°*," and on the map of "*Gedaens Coursen*": "*Snow lay here on the mountains as late as the month of August, even up to the water's edge*" (alhier lach 't sneeuw in de maend Augustus nog op de bergen tot op strand toe). Von Krusenstern also saw here: "*tief im Lande hohe Schneeberge.*"

† Von Krusenstern, *Reise um die Welt*, Th. II, p. 95. It is remarkable that, half a century later, this river was first discovered in the interior of *Krofto* and described by a Russian traveller, Dr. L. Schrenk. After Dr. S. had left the continent (*Amurland*) Jan. 30th, 1856, he went along the west coast of *Krofto* up to the Bay de la Jonquière, Lapérouse (at lat. 50° 54' N. and long. 142° 16' E.), where to the S. of cape *Dui (Itoi, Toknai)* the Giljak population lives, and which is the N. boundary of the *Ainoes*. On the 8th Feb., near the village of *Arkei (Ar'koi, Toknai)* he went in an oblique direction across the island to its E. coast, which is washed by the Great Ocean. According to the information of the natives he was to cross three mountain chains till he came to the river *Pym*. This is the *Boronai*, to which von Krusenstern gave the name of *Newa*. The *Pym*, which waters numbers of Giljak villages from its source to its mouth (in the W. of *Bay Patientie*), Schrenk calls the artery of the island. This river has a rapid stream, so that it resembles a mountain stream, the upper part never freezes, notwithstanding the severe colds during which the temperature sometimes sinks below the point at which quicksilver freezes.

In the afternoon of the 26th July, having sailed 3½ miles E. b. S., Vries came to anchor at 6 o'clock in 18 fathoms stiff-clay (*steekgrond*) mixed with small stones. He was at about 1½ from shore, at 48° 54'. "Had a point, beyond which we could see no land, like a small island S. E. b. E., 5 miles from us, and an island lay S. S. E. 4 miles from us. The land of said point stretches N. W. for as far as we could follow it with our eyes." This point was named *Cape Patientie*,

The water is exceeding rich in fish and sometimes in autumn in salmon, among which the *salmo lagocephalus*, as in the *Amur*, is in the greatest quantity. The large numbers taken by the Giljaks insures them an easy life for themselves and their dogs during the long winter. On this account also come many neighbouring tribes every winter to the valley of the *Pym*, as: *Ainoes* from the *Gulf of Patientie* with Japanese wares; *Oroks* (*Orotsko*, Toknai), with furs, the produce of the chase; *Giljaks* from both coasts, with sealskins and flesh, together with some tribes from the continent, such as *Mangoens* from the *Amur* (*Manko*, Rinso), with Mandsour and-Russian products, who come to the *Pymi-Giljaks*, partly to provide themselves with fish and jukkola (*fishroe*), partly for the sake of the foreign goods brought thither from all parts.

Following the river to come to the east coast (*Bogt Patientie*), the temperature fell on the 18th Feb. at 7 in the morning, to — 42° R., and on the following morning to — 31° R. "Such excessive cold, says Dr. Schrenk, leads us to suppose that the interior of the island has a climate more like that of the continent than one would expect of an island." This was also proved by the vegetation. In the upper part of the valley of the *Pym*, one every where sees the fir-tree (*Abies jezoënsis*?) while the larch (*Larix leptostachys*) to the seacoast supplants all other trees. Neither deer nor elands are to be found here, but the musk (*Likonkamui*, Aino) and the reindeer are. There is also still on *Krafto* a tribe of Tungo reindeer nomades, while the Tungoes on the *Amur* have long given up the breeding of the reindeer. On the 20th Feb. Schrenk reached the E. coast of the island, and returned along the same road. (*Bulletin de la Classe Physico-mathématique de l'Académie Impériale des Sciences de St. Pétersbourg*, Tome XIV. 1856.)

and the island *Robben* (seal) *Island*. Von Krusenstern also, after having sailed round the bay at short distance, came to anchor on the E. side in 11 fathoms clay soundings. On his map (*Atlas* N^o. LXXIII) the anchorage of the *Nadeshda* is placed at 49° 11' N. lat. and 142° 10' E. long; 17' more N. and 8' more W. therefore than that of the *Castricum*. According to his observations, the N. boundary of the bay is at lat. 49° 19' N., while, according to the determination of the anchorage of *Vries*, which was 1½ mile from the N. shore, it was 49°, and according to Jansson's map it lies at 49° 15' N. lat. From the reconnoitring undertaken next day under the mate Janz Coen, it appeared that the tongue running out to *Cape Patientie*, is not more than a mile broad, that one can hear the sea roar on the east coast and see it from a height; they could also clearly distinguish the great inland lake of *Taraika*, which on Toknai's map spreads deep into the land, in the background of the bay. He also found *Aino* dwellings along the N. W. coast and visited some of them. Thence we may infer that the *Castricum* was anchored much more S. and E. than the *Nadeshda*, from which Lieut. Ratmanoff examined the N. coast with a boat, and discovered the mouth of a river, 15 fathoms wide, 7 feet deep and full of fish, and which he went up about five Engl. miles. This river, which takes its rise in the high mountain chain extending from 50 to 50½° lat., is, after the *Boronai*, the largest which falls into the bay. On Toknai's map the mouth is placed between the *Aino* villages *Nokoro* and *Nifiktai*. Coen thought it a beautiful country, though there was yet a large patch of snow on the

strand, and Ratmanoff found the land partly muddy, partly covered with a fat, black soil. At the end of May snow was still to be seen in many places, and the trees had scarcely begun to bud. The Russians nowhere saw any traces of population, except some *Ainoes* who fled from them. The Dutch on the contrary found dwellings, burial places and hospitable inhabitants with whom they held friendly intercourse and whom they considered as of the same race as those of the south of *Jezo*. It is possible that the population of that part of *Krafto* has decreased since 170 years; but on Toknai's map of 1786 there are 96 inhabited places marked by name, from the W. mouth of the *Boronai*, round the lake of *Taraika* up to *Cape Patientie*. These are however mostly hunting and fishing nomadic tribes, who generally only come from the month of June to the coast and the mouths of the rivers to collect there their provision of fish for the long winter.

Cape Patientie is placed by von Krusenstern at lat. $48^{\circ} 52'$ N. and Long. $114^{\circ} 46' 15''$ E. According to the observations of Vries, it must be placed at about $48^{\circ} 34'$ N.; on Jansson's map it is placed at $48^{\circ} 23'$, and still more to the S. on the other maps. This cape is a low promontory, formed by a double hill, and running out to the S. in a long, flat tongue of land, as is clearly shown on Vries's maps.

S. W. b. S. of *Cape Patientie* a small island was seen S. S. E., from Vries's anchorage in this bay, on the 26th of July, at 5 miles distance, and on the 28th more nearly examined. "Then the commander, mate *Roelof Sievertsz*, steered with the boat to said island to visit it. Arriving there we found the island sur-

rounded with sunken cliffs, seeing them stretch out in some places for a mile farther in sea. This reef stretches N. of the island to the main land, and also in its length S. in sea, but has many projecting reefs. There is also a point of a reef N. N. E. on which lies another large cliff or small island. These reefs seem to run up almost on to the point of the main land, though there seemed to be a narrow passage. Had also observed seals by thousands on the cliffs and water, and found two small huts with fire-places on the island. We gave it the name of Robben (Seal) island." We have copied this admirable description from the Journal, because it may serve as appendix to that communicated by the great Russian hydrographer. "*Wir sahen in einer Entfernung von höchstens 3 bis 4 Meilen (Engl.) das gefährliche Felsenriff, welches das Robben Eyland umgiebt. Es erstreckte sich von N. N. W. $\frac{1}{2}$ W. bis N. O. Die Wellen brachen sich heftig. Ueberall im Norden sahen wir ein grosses Eisfeld, unter welchem wahrscheinlich die Klippen fortgingen, die wohl auch das weitere Treiben des Eises in dieser Richtung aufhielten. Einzelne Brandungen konnte man nach Osten zu, so weit das Auge reichte wahrnehmen.*" "*Die Nordost spitze liegt nach unsern Beobachtungen in $48^{\circ} 36'$ der Breite und $144^{\circ} 33'$ der Länge, und derjenige Theil, den man für die Südwest Spitze ansehen kann, in $48^{\circ} 28'$ und $144^{\circ} 10'$, so dass der ganze Umfang des Riffs gegen 35 engl. Meilen ausmacht.*" * On Jansson's map the N. E. point of the reef is at lat. $47^{\circ} 25' N.$, and S. W. at $47^{\circ} 8'$. The small island on

* Von Krusenstern, *Reise um die Welt*, Th. II, p. 98, 99.

the map of "*Gedaene Ontdeckinghe*" also lies as much S.; on that of "*Gedaene Coursen*" however the middle is placed at about $48^{\circ} 12'$. According to the observations taken on Vries's anchorage, *Robben Island* must be placed at $48^{\circ} 31'$ which nearly agrees with that of von Krusenstern. Toknai, on his map, names *Robben Island: Wotamo siri*, and *Cape Patientie: Fumonots*. The longitude observed on board the *Castricum* we have omitted here for reasons given above, neither have we everywhere spoken of the depth and the soundings which our Dutch and Russian navigators have so carefully noted along the E. coast of *Krafto* and in the *Bay of Patientie*. On board the *Castricum*, which kept farther from the shore, they mostly found from 60 to 34 fathoms clay, up to the parallel of *Robben island*, and farther in the bay to within a distance of $1\frac{1}{2}$ mile from shore, they led 18 fathoms clay mixed with small stones. On board the *Nadeshda*, which sometimes approached to within a shorter distance of the coast and then again retired, they sounded from 95 to 20 fathoms clay, and at the N. end of the *Bocht Patientie* from 9 to 4 fathoms within a short distance. A mile N. W. of *Robben island* Coen found the depth of 35 fathoms clay, shoaling up to 16 fathoms shell and shingle, and 2 miles S. b. E. $\frac{1}{2}$ E. of it 10 fathoms shelly ground. To the E. of *Cape Patientie* the depths increase rapidly to 80 and 95 fathoms, — less so and more gradually towards the S. E., where at a distance of 9 miles 75 fathoms clay were found. Von Krusenstern, who placed but little confidence on his compasses, gives the average deviation at his second anchorage (Lat. $49^{\circ} 13' 53''$, and Long. $143^{\circ} 48' 30''$) at $0^{\circ} 38' E.$ On board

the Castricum it was found at lat. $48^{\circ} 26'$ N. to be $7^{\circ} 30'$ E. and "*de compassen op 9° oostering gelegd.*"

On the 3rd of August, at the accounted lat. $41^{\circ} 8\frac{1}{2}'$, it "*was resolved, as the appointed time, according to the instructions of the General and Counsellors of India, had expired, that we should do our best to come again into the South Sea; therefore to steer for Canal de Vries.*" Cape Patientie therefore received the second name of "*Caep Keer Weer,*" or Cape Turn Again.

We have already met our bold navigators on the 5th of August, in the strait which commemorates the name of their commander, and described their stay in *Bay de Goede Hoop*, from the 16th of August to the 1st of September, elucidating and confirming their observations. We have also noted in the annals of discoveries their discoveries on the voyage back, along the E. coast of Japan and of the islands to which they gave the name of a still worthier navigator, Abel Tasman. Let us then yet mention the day on which the *Castricum*, under command of Commodore Maerten Gerritz Vries arrived safely in the harbour of *Tayouan* on *Formosa*, and repeat the ejaculation of joy and thanksgiving with which the Journal ends:

"*Came — November 18th 1643 — to anchor in 10 fathoms, for which we cannot enough praise and thank Almighty God for having so graciously preserved us during this perilous voyage, and brought us here in safety in Tayouan. To him be all honour and glory, Amen!*"

And here I close my geo-hydrographic elucidations, in which I have given navigators some useful hints and notices for the extention of geography and the art of navigation. I wrote this with the primary purpose

of placing it in the hands of the officers of the Royal Navy, of men adorned by talents and experience, and more than ever inspired with the spirit of our Dutch navigators of the 17th cent., and especially of those who are now detached to Japan, to whom not only the task is confided of imparting scientific knowledge to the inquisitive people of that empire, but to whom it is peculiarly confided to lay the foundations of a navy on European principles, and above all to open to *Japan* the world, to her ships the navigation of the Great Ocean, and to her people the trade of the world. If Netherland influence and confidence has been able to remove the cliffs of prejudice and suspicion of a government which for ages has followed the system of exclusion as the foundation for the preservation of peace and freedom, not from caprice but necessity; if Netherlanders by birth, or men of other tongues attached to Netherland and naturalised after many years of faithful service, — if such men from the year 1641, have been able to keep up as it were in secret in their prison on the isolated isle of *Decima*, the enlightening fire of science, — what expectations may we not now entertain, when the Netherland representatives of European science in *Japan* are permitted openly and unhindered to show the torch of civilisation, and by means of instructing the Japanese, instruct themselves with regard to Japanese affairs and science; and where the finest opportunity is afforded them, under the Dutch and Japanese flag united, of examining and extending by new observations and discoveries, the extensive field of geography and hydrography, which, until very lately, the foreigner could only follow in secret.

THE AINO TRIBE.

Aino signifies man, human being, and is the name this tribe gives itself and under which it is known. In the oldest historical times (600 b. Christ), the *Ainoes*, who in the history of Japan are called *Asuma Jebisu*, that is, East-savages, inhabited the most northern part of the island of *Nippon*, viz., the present provinces of *Mutsu*, *Dewa* and the north of *Jetsigo*, then called *Jebisu no Kuni*, the Land of the savages. As late as the 7th cent. the *Jebisu* were spread over *Mutsu* and *Dewa* up to 38° N. lat., and were in continual war with the Japanese. At the beginning of the 9th cent. the island of *Nippon* had already come under the domination of the *Mikadoes*, the hereditary emperors of Japan; notwithstanding however, the civilised population of the south of Japan, spreading up to the north, carried on a continual struggle with that rude northern tribe, till they were at length subdued and amalgamated to one people, or else partly driven out, partly exterminated. Many who would not submit had passed over to *Jezo*, crossing the strait *Tsugar*, which separates *Nippon* from that island, and united themselves there with their old compatriots. But in the 14th cent. the *Ainoes* in the S. of that island were also reduced by the Japanese. The *Ainoes* now inhabit *Jezo* and the *Kurils*, and the S. part of *Krafto* along the W. coast up to 48° N. lat. and the E. coast to the *Bay of Patientie*.

Before the discovery of the land of *Jezo* by Maerten Gerritz. Vries, the knowledge of that land and its inhabitants were confined to the communications of the

Patres Aloisius Froes and Hieronymus de Angelis and of Joan Saris and François Caron. In his letter of March 1th, 1565, (twenty two years therefore after the discovery of Japan) written from *Mijako*, the capital of that empire, Froes thus describes that people: "In the N. of Japan, three hundred *Leucas*, * lies an extensive province inhabited by savage people. † They are clothed with skins, are hairy all over the body, have a terribly long beard and very large mustaches which they lift up with a small stick when they wish to drink. They are fond of strong drinks, are bold in war and much feared by the Japanese. If they are wounded in battle they wash their wounds with salt water; this is their only remedy. It is said that they carry a mirror on the breast. They bind their swords to the head in such a manner that the handle hangs down on the shoulder. They have no religion: it seems that they are used to pray to heaven, ‡ etc." More detailed is the account given of the land of *Jezo* and its inhabitants by Hieronymus de Angelis in his letter from

* *Leuca (Legna)* 17½ to a degree.

† "*Amplissima sylvestrium hominum regio.*" This expression seems to have induced Abrahamus Ortelius in his "*Theatrum orbis terrarum*" to name the island laid down to the N. of Japan "*Satyrorum Insulam.*"

‡ *Rerum a Societate Jesu in Oriente gestarum volumen. Coloniae. 1574. page 426.* "Japoniae terrae in Septentrionem adiacet amplissima sylvestrium hominum regio, leucas ab urbe Meaco trecentas. Bestiarum pellibus induuntur, toto hirti corpore, ingenti barba, mystacibus maximis, quas paxillo subrigunt potaturi. Vini gens avida in primis, ad bella ferox, formidolosa Japoniis. In praelio sauciati, salitis aquis abluunt vulnera, id unum genti remedium est. Speculum gestare dicuntur in pectore; ad caput gladios alligant sic, ut in humeros manubrium desinat. Sacra habent nulla, caelum demtaxat venerari soliti sunt."

Japan in 1622, a year before he was burnt at *Jedo*. Nicolaes Witsen has copied it in his "Noord-Oost Tartarye," * and this sketch of the manners and customs of the *Ainoes* is too important for us not to copy it here literally from that scarce book, in order that we may compare it with the account of our Netherland navigators.

"As for the appearance of the inhabitants, they are coarse and of larger stature than men generally are: more inclining in colour to white than brown. They wear long beards sometimes down to the middle. They shave the hair of the forehead half off, so that they have no hair on the temples, but a good deal behind, as some wear it as long as the Japanese. In general they have the ears bored, and have silver rings in them instead of pendants; those who have no silver run a flock of silk through the hole and let the ends hang down long. This is done by both men and women. The dress of both sexes is long, interwoven with silk, embroidered with ornaments of crosses or roses of the same stuff, large and small. Their stuffs are of silk, cotton or linen. For arms they employ arrows, bows, lances and swords, which last are not larger than an ordinary Japanese poker. Instead of armour they have coats of small planks fastened together, which is ridiculous to look at. They have poisoned arrows which give an incurable wound. They are very quarrelsome, though they seldom kill one another. Large quantities of dried fish, also herrings, swans and cranes, living as well as dead, and also dried, together with falcons and other birds, were brought to *Matsumay* for sale.

* N. Witsen, deel II. l. c. p. 57.

Whales are also caught there and the *Todonoeno* (seals), the skin of which is hairy, not unlike that of a swine, and four feet long. These fish are to be had there very cheap. They do not trade with gold or silver coin, but exchange their wares for rice, cotton, yarn, linen and stuffs, or ready made clothing. The lord of *Matsumay* assured me that the inhabitants of *Jesso* went to three islands not far distant from their country and the inhabitants of which had no beards and a very different language from those of *Jesso*, to purchase fish-skins, which they call *Raccon* (*Rakko*, *Enydrys marina*). But he did not know whether those islands were to the S. or N. of *Jesso*. As to their knowledge of another world and a future life, it is little or nothing. They have some sort of worship for the Sun and Moon as the two greatest lights; as also some mountain and sea devils; for as they mostly support themselves in the mountains by hunting and wood-cutting, and on the sea with fishing, they hope by these means to catch much and never to be in want of wood for fuel or building. They have neither Boses nor priests nor temples nor any place where they come together to do anything for their salvation.

“None among them are able to read or write.

“Each one has his own lawful wife, or as some suppose, even two; though there are many who have concubines in the Chinese manner. When the husband dies the wife often goes to the house of her father-in-law, or to one of the husband’s friends, under condition that she shall never leave it or marry again.

“A woman taken in adultery has the hair of her head shaved off, that she may thus be known; and the adulterer,

or he with whom she has committed the crime, is deprived of his sword and of all his ornaments by the offended husband or by his friends as often as they meet him."

As ambassador from the English Company at the court of *Jedo* in 1613, John Saris, obtained accounts of *Jedzo* (*Jezo*) from a Japanese who had been there twice, which confirm the fierce appearance of that people and also throw some light on their trade. "The men there are white and well made, but very rough and hairy all over their bodies, just like baboons and apes. Their arms consist of a bow and poisoned arrows. Those who live on the south side understand weights and measures, but thirty days journey inland they know nothing about them. They have much silver and gold dust, which they pay the Japanese for rice and other wares. Rice and Japanese cottons are much sought here. Iron and lead they get from Japan. All eatables, and whatever can serve for clothing finds most purchasers. Japan rice brought to *Jedzo* brings a profit of four for one.

"The city where the Japanese most reside here and hold markets is named *Matchma* (*Matsmaë*). In it are 500 Japanese families who have also a fort here, and he who commands in it is named *Matchmadonna* (*Matsmaë Dono*). This city of *Matchma* is the principal staple-place of all *Jedzo*, whither almost all the natives go to buy and sell, especially in the month of September to lay in their winter store. In the month of March they bring salmon and all sorts of fish, together with other wares which the Japanese accept in barter and prefer to their silver. Farther, those of Japan have no fixed dwelling place or market except *Matchma*. Those who live in the same island farther north are

very little and like dwarfs, but the other *Yedsoans* are like those of Japan in size and figure. They have no clothing but what is brought them from Japan.

"Between *Yedso* and Japan there is a very strong stream coming from *Corea* and running E. N. E. The winds are in general there as in Japan, viz., the N. winds begin in September and last till March, and then begin the S. winds." *

François Caron, chief of the Dutch trade in Japan, during the years 1639—40, gives us some less important notices gathered in Japan, on *Jeso* and the *Ainoes*, which we will however cite on account of the completeness of the knowledge of those times respecting that remarkable land and people.

"You travel 27 days farther N. E., bearing well to the E., before you come to the extreme point of the land named *T'sungaar* (*Tsugar*), on the sea: thence you cross a water, about eleven miles wide, and come to the land of *Jeso* or *Sesso*, where precious furs and skins abound, which land is very wild, mountainous and but thinly peopled. This land of *Sesso* is very large, has often been explored by Japanese, deeply and far travelled through, but no one has ever come to the end or come to any certainty respecting it, so that they have generally come short of food and each time been obliged to return. The reports of the visitors have been such that his majesty's curiosity to know more about it has been restrained, for the land (as is said) is

* *Naaukeurige Verzameling der Gedenkwaardigste Reysen na Oost- en West-Indiën enz.* Te Leiden, door P. van der Aa, 1707, Deel 24. *Agste Oost-indische Reys enz.* onder Capitain Joan Saris pag. 136.

wild, and in some parts inhabited by a people with hairy bodies, wearing long hair and beards, as brutal as the Chinese, more like savages than like other men." *

However tiresome these accounts may be for the reader, we have thought it necessary to keep as closely as possible to the original text of books becoming more and more scarce every day. in order to give a clear idea of the then state of knowledge respecting the land of *Jezo* and its inhabitants, the *Ainoes*, before we submit to a more critical examination the ethnological observations made during the memorable voyage of *Vries*.

Soon after *Vries*'s discovery of the land of *Jezo*, and the disastrous voyage of the yacht *Breskens*, several accounts of *Jezo* and its inhabitants reached Holland and from time to time become known through the press. The first account was published as early as 1646 at Amsterdam, under the already quoted title: *Korte Beschrijvinghe van het Eylandt Eso enz.* This piece was afterwards (1692) taken and annotated by *Witsen*. † That learned geographer also communicated a letter "die nopende de ontdekking van het lantschap *Eso of Jesso en Tartarye uit Batavia in den jare 1644 herwaarts is geschreven geworden*," (written to this country from *Batavia* in the year 1644, respecting the discovery of *Eso* or *Jesso* and *Tartary*). The contents are however confined to some geographical accounts respecting *Vries*'s discoveries, and the researches for gold and silver which was the principal motive for

* *Beschrijvinghe van het Machtigh Coninckrijcke Japan enz.* door *Françoys Caron*. T'Amsterdam 1648. p. 1.

† *N. Witsen* l. c. p. 55.

the expeditions of Quast and Tasman, and of Vries and Schaeep to the N. of Japan. Nicolaes Witsen also mentions an account by Philips Jacobsz. de Bakker, second mate on board the *Castricum*. * Of the map published by Jansonius, as also of the other unpublished maps of the voyage and of the "*Opdoeningen en lant-verkennenissen van de zee-kusten des lants van Jesso, en van het Compagnieslant*" preserved by Witsen, we have already spoken at sufficient length. The most important observations and accounts, especially with respect to the *Ainoes*, their manners and customs, which we owe to navigators of modern times and to Japanese who have visited and described the land of *Jezo*, have been lately collected by the writer of these sheets and made into a whole in his "*Beschrijving van Japan*." † The repetition of it here would be superfluous, useful as it might be in itself to confirm, elucidate and enrich the communications of our old Dutch navigators.

We propose here to describe the remarkable tribe of the *Ainoes* according to the accounts given in the refound Journal, and according to all the records which the Netherland press has preserved us of Vries's voyage. At the same time we will keep as closely as possible to the very words in which the different observations are given. ‡

Form and Features of the Ainoes. The inha-

* N. Witsen l. c. page 59.

† *Nippon*, Abtheil. VII, p. 205—224.

‡ The authorities from which we have composed this description are marked as follows: (K. B.) *Korte Beschrijvinghe*; (M. B.) *Mate de Bakker's account*; and (J.) *Coen's Log*.

bitants of these islands of *Eso*, are all much alike, short, stout, compact of stature, have long rough hair and beard, so that the face is pretty nearly covered with it, but the head is shaved in front; they have well chiselled features, black eyes, short, rather thick and not flat noses, low forehead, yellow skin and very hairy all over the body. The women are not so brown as the men, have their hair shorn all round, so that it does not cover their faces. Others let it grow long and twist it up like the Javanese women, paint their eyebrows and lips black and blue, have all, men, women and children, their ears pierced and wear silver rings in them, as also flocks of Armo-silk with lead and copper rings. (K. B.) *

On *Krafto* the women are whiter than on *Jezo*: "Saw (in the *Gulf of Aniva*) a woman sitting in a prow, white, with long black hanging hair on her head, had in each ear a large blue bead chain, on which some other beads were strung. (J.) †

"Found there (*Bay of Patientie*) a white woman, with a pretty face, having long black hair, with a band of beaver (*Sea-otter*) fur round her head, dressed all in fur, having a little girl with her with a fur dress on, with a beautiful band of sable fur round her head; had also a boy standing near her dressed in fur." (J.) The log also speaks of a white man, possibly a ship-

* Compare *Nippon, Atlas*, Tab. XVI, XVII, XVIII.

† Compare *Nippon, VII Atlas*, Tab. XXI, fig. 5. The most precious are the blue *Obsidian* which they call *Krafto tama*, precious stone from *Krafto*. These blue corals are found among all the peoples of the frigid zone, of the northern hemisphere, from the Great Ocean up to *Behring's straits*, where they were found by von Kotzebue in the Sound which bears his name.

wrecked Japanese; though old people, being less exposed to the open air on account of the infirmities of old age, may fade in colour and become whiter as are the women of the better class in this country.

"At some distance from the prow an old white man with a long gray beard, sat on the Japanese manner on a mat to pray, clad in a flowered cotton dress made in the Japanese fashion. My guide motioned me that I should go to the old man." (J.)

Government, Aino-Chiefs, Administration of Justice, Punishment. At the time of Vries's visit to *Jezo*, the *Ainoes* of the southern part of that island had long lived under a Japanese prince who resided in the city of *Matsmaë*. "The *Matsmay Simadonne* (*Matsmaë Sima dona*), Governor or Chief of said island, goes annually to salute the emperor of Japan at *Jedo*, taking with him as presents much silver, feathers (to be used on arrows) and fine furs passing over in a bark from *Eso* to the Japan coast *Nabo*,* whence he journeys by land to *Jedo*." (K. B.)

"Among them there is no legislation or police, no writing or books, no one being able to read or write." (K. B.) They have however chiefs who exercise their authority, and are held in high consideration and honour among them.

"The inhabitants came to meet us in two prows and three persons come over in our prow; we then steered together to their village which they called *Ackys* (*Atkesi* on *Jezo*), and went with the man of greatest

* Probably to the above described harbour of *Nambu*, on the E. coast of *Nippon*. Possibly also the harbour of *Sai* or *Okata*.

authority, whose name was Noiasack, into his house." (J.) These are mostly old men remarkable for experience and social virtues. "While lying at anchor there came a crowd of people on board accompanied by a blind man whom they honoured and respected. This old blind man, before returning to shore, raised his hands and pronounced a long oration over the crew, which our people did not understand a word of." (M. B.)

"The commodore gave the oldest a small Prince flag, with which he seemed very glad, set it up on his house and let it fly." (J.)

The meeting with the *Aino* chiefs in the *Bay of Patientie* may be very properly introduced here to give an idea of those martial personages.

"Saw two staid persons sitting on a large tree which had been thrown by the sea on the coast, stout of limb, the one with a long beard, having a bow and arrow in his hand, with a quiver full of arrows hanging to his head and a hanger at his side; the other was somewhat younger, having two large mustachios, had also a bow and arrow in his hand and further armed with a hanger and quiver full of arrows. Behind them stood two strong men, armed as before, dressed in fur clothing.

The elder of the two stuck his bow in the sand with an arrow next it, and took a long pike about 18 feet long in his hand, and they both remained sitting and the two others standing. On coming a little closer to them I said *Tacoy yankarate* and rubbed my hands together, as I had seen at *Tamarij*, on which the oldest said *Tacoy*. I then went nearer and taking his hand motioned him that we were friends, by pressing

his right hand in both mine; I then took the pike and threw it down, on which our people advanced and those two advanced to welcome them, saying *Tacoy* and pressed the right hand of our people in both theirs as I had done to them, but the two others staid behind, to guard their arms. These two persons were clad in flowered silk Japanese dresses, lined with Chinese *cangangs* with wadding between; so that I suppose the two others were their body guard or servants. These solemn personages had their heads half shaved, with long hair behind hanging quite down to the waist. Their hangers were also ornamented with silver and very fine." (J.) *

These chiefs inquire into transgressions against the law, pronounce sentence and punish. "He (the *Aino* chief) sitting with a wooden club in his hand, with which they execute justice, we saw the girl lying with her face to the ground." (J.) †

"When they punish with death, or take any of their enemies prisoner, they kill by striking a blow with a heavy club in the loins." (J.)

This punishment, as executed on prisoners, is further described. "Having taken some of their enemies prisoner, they punish and kill them in the following manner. The prisoner is put on his feet, the upper part of his body being naked, and his arm or hands fixed to his sides. Thus standing he is held by four persons, two at his arms and two at his feet; then comes a fifth

* Compare: *Voyage de Lapérouse, Atlas* No. 50. where a meeting of *Aino* chiefs on the westcoast of *Krafo* is represented.

† *Nippon*, VII, T. XIX. A. fig. 3. where this club, named *ejō kema*, is figured.

person with a club provided with an iron weight, who measuring how he will strike the sufferer, steps back ten or twelve paces, then swinging the club round his head, and holding it with both hands, advances with a dancing step and strikes the patient on the loins till he gives up the ghost. In the same way they punish their wives and daughters who have been guilty of immodesty."

Religion, Burialplaces. "As much as we could hear or discover they had little or no religion or superstition; but when they sit round a pond and drink, first pour out a few drops in several places round about the pond as if they sacrificed. They have some cut fir sticks with shavings hanging to them, which they stick into the earth in many places, and hang them to the walls in the houses. * When any one among them is ill they cut long shavings off these sticks and wind them round the head and arms of the patient." (K. B.)

"When about to eat, he made prayer, like the Christians, with folded hands." (M. B.)

"Their graves (in the *Gulf of Aniwa*) were above the earth like the roof of a house, the length of a man and three feet high, well made and closed with the bark of large trees." (J.)

"Found (in the *Bay of Patience*) ten graves in which some corpses still lay. These graves were very strangely made of fir planks, raised about a foot above the earth, standing upon supports; beneath was a square

* These sticks with shavings are called by them *Inao* and agree with the *Hei* or *Gokei*, symbols of divinities in the ancient religion, the *Sintô* of the Japanese. Compare *Nippon* VII, p. 214 and *Atlas* Tab. XVII.

coffin, the bottom of wooden trellis-work, airy, on which the corpse lay with a wreath of finely cut shavings round his head. He had an old blue cotton dress on, but that was all decayed; we found in the coffin with him some saucers and vessels for food and other such things, with a bow and arrow. He had also as it seemed had some food in a box; there also lay a small block for stamping rice and a rice-stamper in the coffin. The coffin was well closed with a cover like the roof of a house; above on the sharp edge of the cover lay a finely carved wooden cover. Along the coffin at each end was a finely carved lion or dragon's head, with wooden rings of the same wood in their mouths, and from all the four corners downwards similar carved wood as said above. Having regarded these graves with astonishment, we saw also many little sticks standing near, with fine carved shavings hanging to them." (J.) *

At *Atkesi* or *Jezo* it was remarked that the place "Where the dead lay under the earth," the grave was covered with oyster-shells. In other places they stand in a small hut in the coffins above ground, on four piles, the hut being very cleverly carved with ornamental carving, without any other offerings being found there." (J.)

The hut with a skeleton in it found on *Urup* was doubt-

* Compare with this the tombs in the *Bay de Castries*. *Voyage de Lapérouse*, Atlas, No. 53, as also the tomb observed by Toknai on the W. coast of *Krafto*. *Nippon* VII, p. 217, *Atlas*, Tab. XXII, fig. 15. These tombs have very much analogy with those of some American tribes, viz. the *Dacotaks* and *Chippewas*. With them too before the body is buried, it is preserved for from 12 to 16 months in tombs constructed of planks and beech bark, and resting on piles. During this time food and drink are offered to the souls of the deceased, and arms and other valuables are laid next them.

less a burial place; the sabre hung up before it is a proof of it. In the *Jezoki* * stands: "When the *Ainoes* will solemnly bury any one, they hang up the sabre of the deceased over his grave, on a pole five or six feet high."

"They reported they had been in some huts in which lay a skeleton and a death's head. These huts were made of branches of trees and covered with long grass; found in said huts a pole struck in the ground on which hung a hanger." (J.)

The scars so generally observed on the foreheads of the natives bear evidence of the so-called death struggle, which consists in the nearest relations giving themselves a cut in the forehead with a knife (*makeré*), and offering the blood to the departed souls. † "They have most of them been wounded and cut over the head with many cuts and slashes, as is shown by the large scars." (K. B.) The peaceable *Ainoes* were therefore turned by our people into: "Forest vagabonds or Bandits, every one being his own master." (K. B.)

Manners and Customs, Manner of life and Food: "From their long beards and hair they appear to be very fierce, but know how to conduct themselves so sincerely and simply towards foreigners, that one cannot judge them otherwise than as civil and polished people. When they come to foreigners they dress themselves up in their finest clothes, and know how to behave very modestly, show their courtesy and politeness by bowing the head and folding the hands, rubbing

* *Jeso-ki*, ou *Description de l'île d'Ieso etc.*, par l'interprète Kanemon; in Malte-Brun's *Annales des voyages, etc.* Tom. XXIV, p. 147.

† *Nippon*, VIII, p. 214.

them backwards and forwards the one over the other; singing with a trembling voice as the Japanese do; but when they get a little encouragement they are soon familiar and show a friendly and gay face." (K. B.)

"And then threw his arms amicably round my waist in sign of friendship, and went so hand in hand to his house." (J.) They are hospitable: "on landing we were well received by the natives." (M. B.) "They invited me to enter their huts." (J.)

"Every man has two wives, who make mats, sew their husband's clothes and cook; and when the men collect or cut firewood in the forest, the wife carries it to the prow; and then they have to row as well as the men." (K. B.)

The women, especially the old ones, are not ignorant and seem to have much authority. "on which the oldest woman, understanding my meaning etc." (J.) "A hut out of which came a decrepit old woman leaning on a stick, who seemed to have much authority." (J.) "The men are very jealous of their wives and daughters with strangers, so that they cannot suffer them to romp or play with them. If they remark that any one tempts them to indecency they will kill him if they get him in their power." (K. B.)

When their wives are in childbed they keep in a small separate hut, and for the space of two or three weeks no male is admitted. The children are quite white when brought into the world. When they wanted to give the breast, and any of our men were near, they did it very covertly, not uncovering the breast more than just sufficient to let the infant take the nipple in its mouth. Even very young girls and children,

who often run about naked in fine weather, on seeing one of the Netherlanders, would draw their head, hands and legs together and appear much ashamed. The women carry their infants in their dress, with a strap round the head * over the back; they are much cleaner with the mats with which they cover the floor, and with their food, than with their persons or dress, which very often looks foul and filthy, whether with man, woman or child, and seems to be but seldom renewed or washed. Their food consists of fish, blubber, train, vegetables, red-rose buds, which are in abundance in *Acqueis*; on being plucked they have the size of a medlar, and are dried towards winter and serve for winter-provision. They have japanned cups and square vessels in which they serve up their food, each one having a cup before him, and eating with sticks in the Japanese manner, except at 48° 50' (in the *Bay of Patientie*), where they are indeed shaved in the Japanese manner, dressed in silk, somewhat paler, and changeable of language, but take their food with the fingers, without using the before said sticks." (K. B.) They make no use of salt." (J.) "Both men and women are very fond of strong drinks and are very soon intoxicated." (K. B.) "We drank all round some arac and tobacco, of which they all seemed very desirous." (J.) "When they drink they lift up their moustaches with one

* The *Ainoes* carry all burdens on the back by means of a strap running over the forehead. Having followed this custom from childhood, the *os frontalis* must of course have an unnatural inclination and be pressed backward, which is also the characteristic of their foreheads. Compare *Nippon* VII. Atlas Tab. XVI, where the manner in which the *Ainoes* carry their arms is shown.

finger." (J.) "They sit on the mats in the Japanese manner." (J.)

Dwellings, houses, huts, barns, forts etc. "Their huts, which are mostly situated on the strand, on the declivity of the mountains, and some few on the top, are of planks, planed and jointed, covered with the bark of trees as well on the sides as on the top, and provided with a window above, to let out the smoke from the fire which is made in the middle of the house. Inside it consists of one room planked off with deals and curiously covered with single rushmats along the ground, 10 or 12 paces long and 6 broad, all very nicely made, some set round with a palisade of pines. Their houses are not more than twice a man's height, just as the farmhouses in the Netherlands, and the doors are so low that one goes in stooping. There are not many standing together; the greatest number our people saw together was 18 or 20, generally 6, 7, 9 and 12, then more than half a mile from the others, also for the most part empty and uninhabited. They have no furniture except rushmats, their Japanese dresses together with the silver work are at the same time ornaments, they have fur covers to sit on or sleep on." (K. B.)

Many descriptions in the Log, and the drawings we have obtained from Japanese, agree with the above.* There they also speak of huts, barns, and cages for bears, eagles and other birds, etc. A hut or tent on the strand in the gulf of *Aniwa*, is thus described:

* Nippon I. c. Tab. XVI. XX. Von Krusenstern Reise. Atlas No. LXXXVI.

"it was made up merely of mats, with sticks in a triangle; in the centre was a fire over which hung an iron kettle with salmon and green herbs to boil." (J) *

Small warehouses about a man's height above the ground, standing on four supports or uprights, in which lay dried fish; the doors were made of firwood and only closed with string." †

"Near this house stood a large cage in which some animal seemed formerly to have been kept." Many small cages to which vessels for food and water were still attached." (J.) Here stood a large square cage in which was a large black bear, ‡ at each corner of the cage was a long pine with a may to which was hanging many shavings. I supposed that it was in triumph over the imprisoned bear or for some religious ceremony." (J) **

While the *Castricum* was refreshing in the *Bay de Goede Hoop*, they learned that the inhabitants of *Atkesi* were living in good understanding with their southern neighbours, and the mate Coen saw some fortified dwellings there. These forts were made as follows: on the mountain on which they were placed, was a small road steep to climb, and round on the four sides, pal-

* Compare Nippon l. c. Tab. XVIII. Von Krusenstern, l. c. No. LXXX.

† Von Krusenstern l. c. No. LXXVI. Nippon l. c. Tab. XVI.

‡ Nippon l. c. Tab. XVI.

** They are the above mentioned Inao. Besides, the bear is honoured among them and therefore called *Hokjok Kamni* (*Kamni*, Japanese *Kami*, God). They however bring up young bears for the purpose of sacrificing them to their Protecting-gods, and eating them at the sacrificial feast. Compare Nippon l. c. p. 203, 219. Tab. XVII, where the bear-feast *Omsia* is figured.

lissades were placed of the height and length of 1½ man's length; within this stood two or three houses. There were large fir doors in the pallissades with strong clamps; when they were closed two stout bars were passed through the clamps and thus fastened them. At two corners of these square placed pallisades, a high scaffolding is made of fir planks for a look out; further, the pallisades are well fastened together with cross bars." (J.)

Dress, ornaments, etc. "Their dress is mostly in the Japanese manner, but seldom of silk, mostly of cangans dyed blue with water flowers, with or without wadded Japanese petticoats. Some make the dress and petticoat of the same stuff, the sleeves not so wide at the hands, but nearly tight, with flounces and pieces of silk sewed on cross-wise; they also make dresses of skins of animals, the men having them open in front, and the women closed as a shirt." (K. B.)

The dress and ornaments are more particularly described in the Log. On the east coast of *Jezo*: "They had coarse dresses of hemp linnen on, * and over that coats made of skins; they had holes in their ears through which hung strings; the one had a ring in his ear, which was of a sort of half copper half gold." (J) †

In the *Gulf of Aniwa*. "The man had on a coat of cotton, blue with white spots; his women were dressed, the one with a coarse hemp dress, the other with one of seal skin." (J.) ‡

* These are made of the bark of a tree named *At'ni*, probably a sort of *Broussonetia*. Compare Nippon, l. c., page 209. Tab. XVII.

† Nippon, l. c. page 210. Tab. XXI, fig. 6, 7, 8.

‡ Nippon, l. c. Tab. XVI, XVII, XVIII.

"And they were in some places stitched with red and blue cotton thread." "Some had dresses of skin on."

"We found there on a raised place on which lay mats (the *Aino* chief) sitting, dressed in a blue cotton dress with white flowers; his wife on his left side was dressed in a dress ornamented with many bones and crosses, stitched with cotton threads of all kinds of colours; these dresses were like the Japanese catambers (*Kata hira*, a sort of muslin.)

"The decrepid old man (an *Aino* chief) had on a blue cotton dress, on which was printed Japanese characters with gold in a large square space. This dress stitched and ornamented with all kinds of coloured threads." (J.)

"Had all of them tufts of armoi-silk of all colours in their ears." (J.)

"The host's wife had a large blue bead chain round her neck, between which were strung alternately corals and coppers." (J.)

"Some of them had large silver rings in their ears." (J.)

"One of which women had a young child on her lap, as beautiful as I have ever seen, which was a girl, having a blue bead chain round its neck, a blue bead and a silver one alternately; to the chain hung two large silver rings, beautifully made, weighing together a good $\frac{1}{2}$ pound." *

Arms, vehicles, instruments for hunting and fishing. "Their arms are bow and arrows, together with a hanger, much like the Japanese, the

* A drawing was given us of such a necklace, with brass ornaments, very valuable in its sort. *Nippon*, l. c. Tab. XXI, fig. 4.

blade inlaid with a thin silver border; they bear it with a girdle in the Persian manner, the quiver with a band round the head, hanging on the right side. Their bows are 4 or 5 feet long, of ash or elm, and the arrows about half a yard, very cleverly made with a small reed harpoon at the end, rubbed with black poison, so that whoever is wounded by it must immediately die." (J.) *

This is confirmed.

"We admired the cunning manner, in which their arrows were made, some rubbed with poison." (J.)

"The oldest had a quiver hanging to his head, with a bow in his hand and a sword at his side. We saw no arms besides." †

"The inhabitants (*Gulf of Aniva*) had some of them hangers at their sides, the blades of which were inlaid with silver, very curiously, as were also the sheaths and points. The handles of their hangers were also very beautifully inlaid and worked in silver." (J.)

"These people are by nature idle, not industrious in labour, neither sow nor reap, gain their subsistence in a small boat which is cut out of a thick tree, strengthened on each side with four planks one foot high, ‡ in which they row just as our farmers in their milkboats, but do not put their oars into the water together. With these boats, they go to fish for seals and other animals, for which they have instruments, as harpoons of bone, the point provided with a piece of iron or copper. They had also nets made in the Dutch manner, the thread

* Nippon, c. l. page 210—211. Tab. XXII, fig. 1—5.

† Nippon, l. c. Tab. XVI.

‡ Compare Nippon, l. c. page 213. Tab. XXIII, fig. 1, 2, 3.

being spun of hemp which grows wild there; holding one end in the mouth they know how to twist the thread with their hands in such a manner as to make it serviceable." (K. B.)

They have their vessels towed by dogs. "They harnessed five rough white dogs to it with hemp strings; the steersman sitting behind in the boat called out, and the dogs then began to pull." (J.)

As also before their sledges. "An ice-sledge which was of a strange shape." (J.) *

"They have also traps which being bent like a bow, there is a round hole made in the wood of the bow in which they lay some bait, the birds, such as mews, eagles, snipes or ravens coming to pick in it, or putting in their feet, the bow springs up and the bird is caught. † Wherever they go they have their bows and arrows as also a hanger at their side, and thus armed they go into the woods to shoot the large game such as bears, stags, harts, elands and other animals unknown to us." (K. B.)

"Their dogs, taught to catch fish as naturally as can be imagined, lay in wait on the shore of the sea or the banks of the river, and release each other as if they were men, when one has been a certain time on the look out. The rest of the dogs in troops of ten or twelve run along the strand and when they see any movement of salmon they rush into the water, swimming in a half moon. The salmon^s alarmed jump out of the water into places where there is little or no

* Nippon, l. c. Tab. XXII, fig. 7.

† These bow gins are very ingeniously contrived; they are also in use in Japan and are called *Hona wake*.

water, where they are seized by the dogs on the look out, who bite off their heads and bring the bodies to their masters, and then return again to their post. This takes place at low water." (J.)

Their method of making fire is remarkable and simple. "They had their instruments for making fire with them; these were square planks with a hollow in them, then they have reeds into which is inserted a short stick; when they want to make fire, they put the short stick in the hollow and rub it between the hands so that it turns round, and so being dipped in melted sulphur they hold that to it and soon have burning fire." (J.)

Trade. The *Ainoes* only carry on barter with the Japanese, with the inhabitants of the north of *Krafto*, and of *Amurland*. "The men barter train, blubber, smoked whale tongue, many sorts of skins and feathers with the inhabitants of Japan, who come here once a year to buy those wares, giving in exchange rice, scacie, Japanese clothing (silk and blue cangans), copper tobaccopipes and tobacco, boxes, japanned vessels for eating and drinking and cups; silver earrings, lead rings for hanging in the ear, axes and knives, so that most of what they possess, they have in exchange from the Japanese. Their language is somewhat mixed up with Japanese. They are very cunning in their trade, but not thievish." (K. B.)

On the east coast of *Jeso* they came to offer their goods to the Netherlanders: "This prow was full of furs, such as sealskins, eland, otter and bearskins and others of kinds unknown to us. They offered to exchange all for Japanese clothing." (J.)

"In the Gulf of *Aniwa* and the *Bay of Patience*,

were very desirous of iron, giving in exchange feathers and fur, knowing very ingeniously how to pack up the feathers in boxes." (K. B.)

"They offered me a fine otterskin for which I gave an old axe with which they were very glad." (J.)

"However much silver we might offer them they always preferred iron to silver." (S. B.)

"These people were also very fond of silk stuffs, for which they offered furs and silverwork in abundance." (S. B.)

The trade of the Japanese with the *Aino* tribes now extends along the whole coast of *Jeso* and up to *Krafzo*, in the Gulf of *Aniwa*, and is carried on with much advantage. Dried and salted fish, especially salmon, herring, sardinias, stockfish, shelfish, such as (*Awawi*, *Heliotis Japonica*), *Tripang*, (*Iriko*), seaweed, (*Kombu*, *Fucus esculentus*) bearskins, sea and river otterskins, eagle's feathers, are the principal articles which they exchange for rice, tobacco, cotton stuffs, old and new articles of clothing, japanned wares, sabres, knives, raw iron, cast iron, and copper kettles and pans, etc. The Japanese also exchange some other goods with the *Ainoes*, such as flowered silks, and silks interwoven with goldthread, named *Kensju*, fishing-lines (*susi*, made from the *corpus sericeum* of a caterpillar) the before mentioned blue obsidian coral (*Krafto tama*) and enameled tobacco-pipes, which they obtain by their intercourse with *Amurland* from the people of *Santan* and from the *Mantschous*, who come to *Deren*, a commercial place on the *Amur*, not far from the *Bay of Castries*. *

* *Nippon*, l. c. page 173.

A solution of the problem of the descent of the *Ainoes* and their relationship with other neighbouring nations, would be a highly important task for the science of ethnology. Their fables relative to their descent, as preserved in traditions and national songs, deserve no more credit than all similar fabulous accounts of other rude and uncivilised nations. * The *Jebisu* or East savages have been known to the Japanese from the time that Zin mu ten wô, the founder of the *Mikado's* or Hereditary emperor's dynasty, began to extend his empire to the east and north, that is to say 660 years before Christ. In Chinese history it is not till the dynasty of Han (189 B.C. to 30 A.D.) that we find any mention of the tribe *Mao-min*, inhabiting the other side of the East sea, and whose bodies were covered with hair. In the history of the *Sui* dynasty (A.D. 608—622) mention is also made of a tribe *Mozin*, consisting of fifty hordes, living in the mountains N.W. of the land of *Woke* (*Japan*). A personal acquaintance with the *Ainoes* was not made till the middle of the 7th cent. (659), when a Japanese embassy brought two *Ainoes* as curiosities to the court of *Tang* in China, † As in the time of Zin mu ten wô, the greater part of the North of *Nippon* was inhabited by the Eastern savages, the *Ainoes*, we may with great appearance of probability suppose that tribe has existed there for 2500 years. The north eastern boundary of their dispersion cannot however be traced farther than to the second of the Kurils from *Kamtschatka*,

* Compare *Nippon* l. c. page 221.

† *Nippon* l. c. p. 222.

Para muschir. On the first of the Kurils, *Schnuschu*, a mixture of the *Ainoes* with the original tribe of *Kamtschadales*, the so called *Itülms* took place. These *Itülms* however have no similarity with the inhabitants of the southern *Kurils*, the *Ainoes*, either in appearance or language; and these ancient inhabitants of *Kamtschatka* inhabited the peninsula (having probably in the remotest times come thither from the land S. W. of the *Amur*) even before the *Tungis* and *Koriaki* who are now established between *Kamtschatka* and the neighbouring *East Siberia*. This great stream was the road of a pre-historic migration, as it will perhaps become that of European civilisation to the interior of the N. E. part of the Chinese empire and of Siberia. The ancient inhabitants of the *Baie de Castries*, as *Lapérouse* has described them to us, have much similarity with the *Ainoes* in appearance, manners and customs. The tribe of the *Kileng* and the *Ketscheng*, the former of which inhabit the territory to the W. of the *Amur*, the valleys watered by the *Hingou* (*Aemgun*), and the latter the coast land to the S. E. of the *Amur* and opposite the island of *Krafto*, have also much similarity in outward appearance, manners and customs with the *Ainoes*. Thus traces, thousands of years old, of the *Aino* tribe may be discovered along the coast of the continent of *Asia*; but the imperfect historical and ethnographical accounts which we as yet possess of these regions do not allow us to follow them further to their cradle in the N. E. of *Kôraï*, and of the S. W. territory of the *Amur*. All that we know of this remarkable people however testifies of its high antiquity.

The result of our conjectures amounts to this: in

the same way as in the pre-historic times the *Itülms* the primitive population of *Kamtschatka*, came to this peninsula, and were afterwards succeeded by another tribe and were driven to the south extremity, it is also probable that in a much earlier time the *Aino* tribe gradually spread themselves along the *Amür*, over the islands so close to the continent (*Jeso*, the *Kurils* and *Krafto*); but driven back in the N. E. by the *Itülmi* who followed them; and in the N. and N. W. by the *Koriäki* and *Tungi* (those nomadic fishermen and hunters whom we recognize under the names of *Smerengurs* and *Orotkskoes* *), and to the S. dispersed or destroyed by the successors of *Zin mu ten wô*, have been confined to their present dwelling-place.

The annals, which have not come to us, in which the migration of the *Aino* tribe is described, is of many thousand years date, and yet a ray of civilisation seems to have enlightened it, even in its cradle. In the same way the history of its separation from the rest of the world counts thousands of years, during which no progress either intellectual or social has taken place among them. Under these circumstances, after so many thousand years we still find the *Ainoes* on the lowest step of patriarchal civilisation which, with their separation from the rest of the world and under the rule of the bold Japanese, they have not had energy enough to go beyond. With such a want of moral energy to be able to refuse the cup of foreign lusts offered them by the polished nations of the west and south, these naturally powerful but innocent creatures

* *Nippon*, l. c. page 182.

will soon descend to the grave as unnerved and demoralised as their neighbours the Kamtschadales and North American tribes!

But Lapérouse and von Krusenstern have already raised a monument to this kind and brave people: "On ne peut douter qu'ils n'ayent beaucoup de considération pour les vieillards, et que leurs mœurs ne soient très-douces; et certainement s'ils étaient pasteurs, et qu'ils eussent de nombreux troupeaux, je ne me formerais pas une autre idée des usages et des mœurs des patriarches." *

"Einigkeit, Stille, Gutmütigkeit, Bereitwilligkeit, Bescheidenheit: alle diese wirklich seltenen Eigenschaften, die sie keiner verfeinerten Kultur zu verdanken haben, sondern welche nur die Gefühle ihres natürlichen Charakter sind, machen, dass ich die Aino für das beste von allen Völkern halte, die ich bis jetzt kenne." †

THE AINO LANGUAGE. * *

The few travellers who have visited the *Aino* countries before the opening of the port of *Hakodate*, have each brought us a list of words collected from the mouth of that remarkable people. ‡ With the exception of the

* *Voyage de Lapérouse*, Tom. III, p. 40.

† Von Krusenstern's *Reise um die Welt*, Band II, p. 80.

‡ Lapérouse, Tom. III, p. 40. Broughton, Tom. I, p. 390. Van Langsdorf, Theil I, p. 300. Von Krusenstern, *Wörterammlung aus der Sprache der Aino* (nach Dawidow). St. Petersburg 1813.

* * The Italian vowel sounds have been adopted for the pronunciation of the Japanese and Aino words.

collection brought over by Davidow from his expedition to the bay of *Aniwa* in 1807, and which was most probably composed by a Japanese, they have in themselves but small philological value. The Japanese however, who have had an intercourse with the natives of *Jezo* for centuries, carried on trade with them and ruled over them, have gradually made themselves thoroughly acquainted with their language and composed dictionaries in which they sought to render as faithfully as possible, and to fix the pronunciation of the words by means of their syllable writing (the so called *I-ro-ku*). * In this manner they have endeavoured by means of writing, to put a stop to the manifold sounds and variable accent to which the dialect of a far dispersed and illiterate people is so subject. Although the *Aino* language has become ennobled by familiar intercourse with a civilised people, yet it has preserved its original features and is characterised as a peculiar and independant language, having no connection with that of any of the neighbouring countries, as far as regards the roots of the words. That some

* The learned Mogami Toknai so frequently mentioned in these pages, published an *Aino* dictionary in 1804, under the title of: *Jezo-Fügen* or *Mosiko Kusa*, and gave us a corrected M. S. of that work: *Jezo ga sima Kotoba*, i. e.: "Language of the island of *Jezo*." Besides this we have received M. S. collections of words from Japanese who have been on *Jezo*. Compare: Nippon, VII, *Nachrichten über Jezo, die Kurilen, Krafsto und das Amurland*, p. 224—244, "*Die Aino-Sprache*." Our worthy countryman Isaac Titsingh (Director of the Netherland trade in Japan from 1780—1784) also made a collection of above a hundred *Aino* words which he has added to his description of the land of *Jezo*, compiled from original Japanese books. *Description de la terre Jezo, traduite du Japonnais, par fen M. Titsingh*, in: *Annales des Voyages, par Malte-Brun*. Tom. XXIV, p. 145.

foreign words have been introduced from the northwest and northern nations (*Samojedes, Tungii* and *Kamtschadales*) with whom the *Ainoes* had intercourse, is not to be denied, any more than that they have naturalised many Japanese words, signifying objects and ideas formerly unknown to them. The *Aino*-language, as the tribe itself, stands isolated from all the others of the N. E. of Asia, for so far as they are yet known. The general rules however according to which the parts of speech are declined and conjugated, agree with those of their southern, northern and western neighbours, who write their language *syllabically* (so as the *Mantchous, Mongols, Tibetans, Jakutes* etc.) and not *figuratively*, that is to say, signs for words (as the Chinese).

It will be sufficient here to give and illustrate by examples the general presiding grammatical principles which the *Aino* language has in common with the Japanese, and thus with other East Asiatic and American languages, and which, though they bear witness of a very ancient source, point to a link in the chain of nations, which afterwards opened the way from the old to the new world.

1. *The words* of both languages are seldom composed of one, generally of two syllables:

Japanese. Kono-aita oki-kata otto-sewo tatsuneta.

Aino. Ofunaki atni-ta uneu is'tan.

Nuper in mare phocam quaesivi.

2. *The Substantives* are without gender, are more frequently used in the singular than in the plural; in the latter number the words are repeated or have some addition; the cases are generally formed by a particle

affixed to the word; the second case or genitive always stands first.

Jap. Ame, *coelum*; fito, *homo*; fito-fito, *homines*; fito-koto, i. e. *homo quivis*; fito-ga, *homo*; fito-no, *hominis* fito-ni, *homini* fito-wo, *hominem*; fito-jori, *ab homine*; fi-no fikari, *solis radius*.

Aino. Rikita, *coelum*; guru, *homo*; guru obitta, *homines omnes*; guru-koro, *hominis*; guru-ta, *homini*; guru-ne (*vel* be), *hominem*; guru-kari, *ab homine*; imuschi nits', *gladii capulum*.

3. *The adjectives* are placed before the substantives; the comparative is formed by affixing a particle to the substantive or pronoun, signifying in Japanese *of*, in the *Aino* language *better than*; the superlative by prefixing certain particles of the same force as the adverb *very*.

Jap. Utsukusi onago; *pulchra foemina*; kono ki-wa kono kusa-jori futoi, *hic arbor hac herba major*; fusino jama ga itsi takaï, *mons fusi perquam altus*.

Aino. Iramasiure matsi, *pulchra foemina*; tanbe kak', *hac re melius*; rui sūnatara, *perquam fortis*; poro biruka fūra, *valde gratus odor*.

4. *The numerals* from *one* to *ten*, as cardinals, are original words in Japanese, whereas in the *Aino* language they only consist of *one* to *eight*, as well as *twenty*, and in old Japanese a *hundred*. They are united by particles signifying *and*, *again*, or *more*, and *minus*.

Jap. Fitots', 1; f'tats', 2; mits', 3; jots', 4; itsuts', 5; muts', 6; nanats', 7; jats', 8; kokonots', 9; tō (towo), 10; hatats', 20; mōmo, 100; tō mata (*atque iterum*) fitots', 11; tō mata f'tats', 12; hatats' mata itsuts', 25; mu-sozi, 60.

Aino. Sinepp, 1; tupp, 2; repp, 3; inepp, 4; asikinepp, 5; iwanbe, 6; aruwanbe, 7; thupe sjanbe, 8; (*ex tupp et sjan; forsan pro i wanbe, i. e. minus decem*); sineb sjan, 9 (*ex sinepp et sjan*); wanbe, 10; hots', 20; asikinepp-hots', 100; (i. e. 5, 20); sinepp ikasima (*plus, verbatim: restat*) wanbe, 11; tupp ikasima wanbe, 12; sinepp ikasima hots', 21; tuppots', (*ex tupp et hots'*) 40; wanbe i rehots', 50; (3:20—10.)

5. *The pronouns.* The personal are different according to the rank (a mark of refined manners); the third person is a circumlocution. The possessives are formed by affixing the genitive termination, and always stand before the substantive.

Jap. Watak's *sive* ware, *ego*; omaë *sive* anata, *tu*; kare *sive* ano fito (*iste homo*) *ille*; watak's domo *sive* warera, *nos*; omaë gata *sive* anata gata, *vos*; karera *sive* ano fito tats', *illi*; watak's'no, *meus*; anata no, *tuns*; ano fito no, *illius*; watak's'no atama, *mei caput*.

Aino. Ku, kuani, *ego*; e, iani, *tu*; iki sja an gur' (*ex iki sja, illinc, an esse, et guru, homo*) *ille*; tsjô kaï (*i. e. hac parte*), *ego*; i tsjô kaï *i. e. ex illa parte*) *tu*; ku koro, *meus*; i-koro, *tuns*; iki sja an gur', *illius, vel tangur, huius. I koro kotan, meum domicilium; tan gur' tsise, huius hominis domus.*

6. *The verbs.* The active verbs have three tenses formed by a change of termination: 1. a present tense, in Japanese with the termination *u*, in the *Aino* language *an, ki, re, u*; 2 a past, mostly in *a*; 3 a future or potential, formed in Japanese by a lengthening of the present tense, in the *Aino* by affixing a particle. The passive verbs have also three tenses formed by a prolongation of the terminations, which in the *Aino*

language appear to be passive auxiliary verbs. The imperative is distinguished by brevity of termination. The indefinite is the same as the present of the indicative; in the *Aino* language, a particle resembling a pronoun is frequently used instead. The mood is formed by affixing the particle which governs it. The negations are joined to the verbs in Japanese and frequently cause a change of construction, in the *Aino* language the negation is *not* marked by the particle. Particles are affixed to the tenses in order to form the participles. Auxiliaries are used in the conjugation of the verbs and have the same conjugation as other verbs; impersonal verbs are seldom used, and for those in use with us, a circumlocution is employed.

Jap. Utsu, *verbero*; utsita, *verberavi*; utsou, *verberabo*; utaruru, *verberor*; utareta, *verberatus*; utareu, *verberabor*; utside, *verberans*; utse, *verbera*; utareta, *verberate*; utsu, *verberare*; watak's'ga sorewo miru joni, *ut id ipse videam*; utanu, *non verbero*; utanu te atta, *non verberavi*; utareru, *non verberor*; utareru te atta, *non verberatus sum*; aru, *esse*; arita, *fui*; arô, *ero*; ame-ga furu, *pluit (verbatim pluvia decedit)*. Kaminari-ga nari, *intonat (Deus fulminans adest)*.

Aino. Sitaiki, *verbero*; sitaiki wa, *verberavi*; sitaiki rusjui, *verberabo*; sitaiki aniki, *verberor*; sitaiki ank' wa, *verberatus sum*; sitaiki anki annan gora, *verberabor*; I (tu) sitaiki, *verbera*; kakure, *veni*; i sitaiki anki, *verberare*; rura-jan, *ut sequatur*; unono s'jomo au, *non congruit, (verbatim congruum non est)*; anats', *habens*; asinike wa, *existens*; an, *habere, esse*: auna, *fui*; an nan koro, *fuero*; asi, *factum est*. Apto asi, *pluit (verbatim, pluvia facta est)*. Kamui fumi, *intonat (verbatim, Deus sonat)*.

7. The prepositions, as also the conjunctions indicative of an aim and giving a reason, are placed at the end of the words to which they relate, without causing any change in them.

Jap. Ni, *ad*; to, *cum*; niote, *quia*; jôni, *ut*; jokka maëni watak'swa desi to jama ni juita, *quatuor ante dies cum discipulo montem ascendi*.

Aino. Ani, *cum*; kusju, *propter*; jakka, *quavis*; tanbe kusju, *propter hanc rem*; tsib ani, *cum nave*; atui kata, *in mare*.

AINO DIALOGUES.

Some *Aino* dialogues may serve for an example of the construction and idiom:

Ikoru kotan siri monosiri anna?	Is all well at home?
Ofunaki atui-kata reba uneu istan.	Lately sailing on sea I caught seals.
Tsibû ani rurajan itasja bunma tutara atte nankonna.	Send this by the ship, I will reward you with two sacks (of rice).
Hosike onumani tan kotanta heroki athuwa.	The day before yesterday there were fishes here.
Keannak' hauki an koratsi an?	Is it as you say?
Sinanta uwekariwa bunkine rejan.	Come here together to keep watch.
Tewun sijamu anakine asjur asi rutske askai nëna.	The man, who must keep watch here, will ask a great reward.
Osi sireba kusju sjomo osjaganke jakka pirikana.	There he comes, has one not to call him.
Tan ithuikari bajasi aiine nekona kotan ana?	This point following, to what place comes one?
Kamui juwanke tsib' jankena.	With God's help is the ship preserved.
Ohono sjomo unukara.	Long not seen.
Weve kappirika ariiamande tsumi itsikore nangonna.	Who evil does is punished.

Pirika gni kurumu an.	It will so very good be.
Ponno osite tsimi anbe ama.	Wait a little, I am dressing.
Teirean gusitapf nani afunkeja.	I expect you, come in.
Nefutsi jokibene sjanke nankoro tasju kamitatsi sinetara sjokoru.	If they good wares are, I give a sack of rice for them.
Uteke anbano uhibibai sen.	To each other the hand giving, the one follows the other.
Nepu karukuse jaibasjare?	Why make you quarrel?
Mokoroi kottetsu uwatasi.	As I will rest, be still.
Ramukanbare tsiriasi.	That is broader than one thinks.
Iteke jaibaro usi.	Nothing unnecessary to speak.

COLLECTION OF AINO WORDS.

We have given a selection of *Aino* words, as well with the intention of giving a hint by philological sources for following the traces of the origin of this remarkable old tribe, as to afford navigators and travellers an opportunity for a closer examination of this nearly unknown language. We have also given the signification of the *Aino* words in Japanese, on the authority of natives of that country who have made a study of the *Aino* language. The *Aino* words of *Jezo* we have for the greater part taken from Toknai's dictionary, and those of *Krafto* from the glossaries of Dawidow and Lapérouse.

NOMINA.

1. The World and the Elements.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
Air.	ki.	pàiri.	
Atmosphere.	sora.	nisoro.	

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Kraflo.</i>
Autumn.	aki.	tjuk.	
Cliff.	se.	rakka.	
Clouds.	kumo.	nisi, nisikuri.	nischi kuri.
Cold.	samuki (kan).	mei.	
Day.	akiraka.	siribekere.	schiribegere.
Today.	kon nitsi.	tantoo.	tan too.
Dew.	tsuju.	munbe.	muni wakka.
Earth.	tsutsi.	toi.	toi toi.
Earthquake.	naï (dsisin).	siri sjumui.	schiri moi.
Ebb.	sihohi.	sirari sjats.	
Evening.	joi.	sirionuma.	unumani.
Field.	no.	nupuka.	nupka.
Fire.	fi.	abe, unszi.	abe undshi.
Flood.	misi sibo.	sirarihaa.	
Ground.	tsi.	sirika.	
Gulf.	tadenami.	kaibe.	kui.
Hail.	arare.	kaukau.	kaukaubass.
Heat.	atsusa.	sirippuke.	schischikf.
Heaven.	ama.	rikita.	ni schi uro?
Hill.	nobori.	nuburi.	noburi.
Ice.	kohori.	junru.	
Island.	sima.	mosiri.	muschiri.
Lake.	midsu umi.	tô.	to.
Light.	fikari.	heriats.	
Lightning.	ina fikari.	kamui ne beke.	kamoïnibiki.
Mist.	kiri.	úrari.	urarias, urai urari.
Mouth.	tsuki.	kunne tsupp.	tombi, tshukf.
Morning.	asa.	nisjats.	nischatzu.
Morningdawn.	akatsuki.	too beker.	schiri-bekere.
Mountain.	jama.	kimita, kimro.	kinda.
Night.	jo.	antsikara.	anzkari.
Lastnight.	konban.	onuman.	
Ore.	kane.	kani.	gani.
Promontory.	saki.	siri ithu.	schiri ido.
Rain.	ame.	apto.	spftu.
Rainbow.	niri.	rawots.	rajots'.
Rivulet.	sawa.	naï.	
Rock.	iwa.	wafara.	
Salt.	siho.	sipo.	schippo.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Kraso.</i>
Sand.	sunu.	ota.	oda.
Sea.	umi.	atai.	adi.
Shadow.	fikage.	tajupke.	tschukuris.
Shore.	fama.	kosju.	rauda.
Smoke.	kemuri.	sibuja.	schibuia.
Snow.	juki.	ubas, ubaschi.	obas, obass.
Spring.	haru.	baikaru.	paigara.
Star.	hosi.	keta, notsju, nod- schu.	keda, nodsi.
Stone.	isi.	s'juma.	schioma.
Stream.	kaha.	bets.	bez.
Summer.	natsu.	sjaku.	schakpa.
Sun.	si.	bekere tsupp, to- notschu.	tschukf kamoi.
Thunder.	kami nari.	kamui fumi.	kanna kamoi fumi.
Water.	midsu.	wakka, be, hakka.	waka, wachka.
Wind.	kaze.	reira.	rera, dirra.
Winter.	fuju.	mata.	madapa.
World.	se kai.	bekere sjam.	begiri schiam.

2. Animals, Plants and their parts.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Kraso.</i>
Animal.	ketamono.	kimo tsap.	
Bark.	kino kawa.	niga fukar'.	nii kapu.
Bird.	tori.	tsikapp.	tzkapf.
Little bird.	kotori.	tsiri.	
Bear.	kuma.	hokujuk'.	chugujukf.
Blood.	tsi.	kem' kemi.	kim.
Body.	mi.	netobake.	nidobaki.
Bones.	hone.	bone.	poné.
Carcase.	karada.	netobake.	
Charcoal.	sumi.	pasipasi.	pas.
Cock.	wo.	binne.	
Dog.	inu.	seta, sita, cheta.	scheda.
Egg.	tamako.	noki, nuki.	zkapf nuki.
Fat.	abura (niku).	ke kiribe.	kiu.
Fish.	uwo.	tsep' tsep'	zepf.
Flea.	nomi.	taike.	taigi.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
Female.	wonna.	menoko (Jap.)	minoko.
Flower.	hana.	ebui.	iboiki.
Fly.	hai, apu.	fitsurube.	hitsurap.
Forest.	hajasi.	teigur.	
Fruit.	mi.	ebuike.	ibuiki.
Heart.	jani.	unkotok'.	
Hen.	me.	matsne.	
Herb.	kusa.	kina.	
Hide.	kawa.	kabu.	kapu.
Horn.	tsuno.	kiran.	
Leaf.	fa.	hamu.	chamu.
Louse.	sirami.	uruki, kii.	uriku.
Male.	wotoko.	okkai.	okkai.
Man.	hito.	sijam, sino.	guru.
Meat.	nik.	kam.	kam.
Milk.	tsitsinosiru.	tôbe.	tô.
Oil.	abura.	sjumu.	
Root.	ne.	kuberikep, sinsits	schyndshiz.
Serpent.	hebi.	tokko (kamo)	toko kamo.
Train (oil).	kusinano abura.	funbei.	funbiki.
Turtle.	kame.	itsinke.	
Vermia.	mosi.	kikiri.	kigiri.
Wood.	ki, ita.	tsikuni, ita, ta.	ziguni, ida.

3. The Body and Members.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
Back.	senaka.	sethuru.	sheduru.
Beard.	kutsihige.	rcki.	rigi.
Belly.	hara.	honi.	chuni.
Breast (chest).	mune.	terar.	
Breasts.	tsitsi.	tôkab.	to.
Cunnus.	tsubi.	pogi (hokki).	
Ear.	mimi.	kisijara,	kischara.
Entrails.	tai tjô.	kankam.	
Eye.	me.	siki.	schiki.
Face.	kaho.	nano.	nano.
Finger.	jubi.	asikibette.	askibits.
Foot.	asi.	kema.	kima.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Kraflo.</i>
Hand.	te.	teke, teki.	tegi, tiké.
Hair (of the head)	kaminoke.	ottobe, numa.	schaba numa.
Head.	atama.	bake.	schaba.
Heart.	kokoro.	sjanbe, sampêh.	schambi.
Lip.	kutsibiru.	hatoje, tsjamon.	
Mouth.	kutsi.	baru, tsjaro.	paru.
Nail.	tsume.	am, ami.	
Navel.	hoso.	hankapui.	changubui.
Neck.	kubi.	rekuts.	regut.
Nose.	hand.	ethû, ito.	idu.
Penis.	mara.	tsii, tsije.	
Skin.	hadaje.	nuwom'kumukasi-	
Tail.	wo.	isi. (ke.	
Tongue.	sita.	be barunbe ba-	
		rumbi.	au.
Tooth.	ha.	imaki, jumaki.	nimaki.
Wing.	hakae.	rafu.	

4. Relations, Society.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Kraflo.</i>
Aunt.	oba.	konnaripe.	
Brother, eldest.	ani.	jûbi.	jebu.
- youngest.	wototo.	iriwaki, aki.	aki.
Chief (prince).	kami.	mosiri kamoi.	
Child.	kotomo.	bô, boho.	po.
Countryman.	fjak'ajo.	toitasisiamo.	
Crew.	funakata.	tsipo guru.	
Criminal.	aku nin.	ujen gur.	uwen.
Daughter.	menoko.	matsihebo.	mazenebu.
Enemy.	teki.	tomautare.	
Father.	tsitsi.	hanbe.	chambi.
Family.	sin rui.	awa.	
Grandson.	mago.	sitsupopo, imitsu-	
		bon.	
Governor.	matsi bugjo.	matsijantono.	
Grandfather.	zizi.	ikasi, sasa.	chambi.
Grandmother.	baba.	sjunsti, hakko.	
Husband.	otto.	hoku.	chogu.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Kraflo.</i>
Man, of consequence.	tats'toki fito.	nisipa.	
Man common.	hei nin.	jajasio.	
Merchant.	akindo.	ihoksiam.	egokfschamo.
Mother.	haha.	habo.	chabu.
Parents.	woja.	serimaka atajho.	
Partner.	tsure.	utare.	
People, old.	tosi jori.	hekai.	chigo.
" young.	wakai.	hekats, uben, beure.	
Poor man.	matsusiki fito.	helon gur.	schirun gurü.
Prince.	tonosama.	tonokamoi.	
Servant.	kattsju.	kojantono.	
Sister, eldest.	ane.	sija, guturesibo.	schian.
" youngest.	imoto.	thuresi.	turisch.
Son.	wotokonoko.	ekkaibebo.	poo.
Soldier.	busi.	tono.	
Thief.	nusu hito.	inuga guru.	ikka guru.
Uncle.	oz.	kensiuts.	atscha.
Wickedness.	aku sin.	ujen gur.	uwen.
Widow.	onakogoke jamo- me.	hoksiak.	
Widower.	otokogoke jamo- wo.	matsusiak, stobja.	
Wife.	tsuma.	matsi.	maz, mati.

5. Habitation, Dwelling.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Kraflo.</i>
Door.	to.	aba.	schiri aba.
Habitation.	tokoro.	kotan.	kodan.
Hearth.	irori.	innunbe, abe.	
House.	ije.	tsise.	zise, zisse.
Hut.	koja.	kasi.	
Roof.	jane.	akup, harukata.	puda.
Window.	mado.	bujara, bujari.	puiri.

6. Tools, etc.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
Anchor.	ikari.	kaje.	kaida.
Axe.	masakari.	mukkari.	mukar.
Arrow.	ja.	ai.	ai.
Bow.	jumi (kia).	gô, kusi, kunisi.	guu ku.
Bow-string.	tsuru.	gûka.	kuga.
Coat.	kimono.	mi (stsi).	imi, atush.
Dress.	kimono.	tsimipu.	imi.
Ear-ring.	mimikane.	ninkari.	ninkari.
Eelspear.	jasu.	opu, urei	
Fishingrod.	tsuribari.	beraje, perai.	apf, pira.
Harpoon.	jasu.	opu, urei.	opf.
Knife.	kokadana.	ibira, makiri.	magiri.
Mast.	tobasira.	kajani.	kaiani.
Net.	ami.	jaa.	ia.
Quiver.	jabako.	ikajup.	igaiupf, ikjup.
Rope.	tsuna.	thubi, tosi.	
Rudder.	ro.	oajui.	
Sail.	fo.	kaja.	kaia.
Shed.	kasa.	kakka, kasja.	chaka.
Ship.	fune.	tsip'.	zibi.
Sledge.	sori.	sikeni.	
Spear, pike.	jari.	fumi, paro.	kun.

7. Actions, effects.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
Beginning.	hazime.	asaino.	aschino.
Compassion.	itsukusimi.	komebar'	komeburu.
Death.	sini.	rai.	rai
End.	owari.	ohari.	
Grief.	mukkasiki.	ramuikasite.	oschiôra.
Happiness.	sjawase.	jainirikarai.	
Hatred.	nikumi.	jesisi.	
Health.	sukujaka, suko- jaka	ramurakke.	katschara-schino.
Hearing.	kiku.	nû.	nu.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Kraflo.</i>
Hunger.	fimozi.	kemuramu.	kemurampa.
Illness.	jamai.	tasijamu, ikoni, siju.	
Joy.	mendô, ahare.	jakata:	
Life.	inotsi.	sikkinoka.	schikfnu.
Love.	koï.	usikkarabare.	
Misfortune.	ing'wan	jaikobonnojeje.	
Motion, vital power.	{ ugoki. inotsi.	moi moi. sikkisa.	moi moi.
Rest.	jasumi.	sini.	
Sight.	miruzi.	nukaru.	nugaru.
Smell.	niwoi.	fûra.	furaan.
Strength.	tsikara.	okira, tsumikoru.	usira.
Suffering.	kurusimi.	ihomasii.	
Taste.	aziwai.	kêra, kêwan.	
Thirst.	nodonokahaki.	igursjai.	igurusch.
Voice.	koje.	hauje.	chan.
War.	ikusa.	tomî.	
Weakness.	jowassa.		schiarî.

8. Properties, Qualities.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Kraflo.</i>
Bitter.	nigai.	balkar, sju.	parakara.
Black.	kuroi.	kunne.	kunni.
Blue.	aho.	sijeî.	
Broad.	hiroî.	tsiwa, tsirinsi.	uschip.
Cold.	samui.	jamu, mei, mean.	mei.
Deep.	fukai.	ohoho, ohô.	ogo.
Dry.	karetaru.	sjats'.	schats.
Fragrant.	{ kobaisi. nihofu.	fûrapiërka. furara karu.	
Great.	oho.	poro.	poro.
Green.	mitori.	tsuisjamu.	schiusiam.
Heavy.	womoi.	base, pase.	paschi.
High.	takai.	rûwa, ri. L.	riuwa.
Humble.	asasi.	ohaku.	ugakfu.
Lean.	jase.	sjotteku.	schattigu.
Left.	fidari.	hari kiuturu.	charik.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Kraflo.</i>
Little.	tsüisasi.	pon.	ponno.
Light.	karui.	kosine.	koschni.
Long (time).	fisasi.	ohonno.	ogonno.
- (measure)	nakasi.	tanne.	tanni.
Narrow.	semai.	tsibakaram.	
Purple.	murusaki.	ikarari.	
Poor.	matusiki.	sirun.	schirun.
Red.	akai.	fure.	furi.
Rich.	tomu.	nisiba.	nischpa.
Shallow.	assi.	ohak'.	
Short.	mizikasi.	takine.	
Sour.	susi.	nukai.	schiuikoi.
Stinking.	kusai.	fura ujen.	fura uwen.
Sweet.	amai.	rura rurakor'.	
Thin.	usuri.	kabar'.	
Warm.	atataka.	popko.	scheschikf.

9. Verbs.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Kraflo.</i>
To be alive	ikite oru.	höjur.	
- answer.	kotafu.	itasjaitats.	eischiwa.
- ask.	tatsunemiru.	isitan.	
- be.	arisu.	an.	
- barter.	topta furu.	itasjare.	itaschare.
- buy.	käu.	ihoku, itometsu.	egokf.
- call.	jobu.	hothui, hotoje.	
- dance.	wodoru.	tapkaru, tafukari.	tapkarawa.
- die.	sinuru.	rai.	rai.
- drink.	nomu.	iku.	igu.
- eat.	kü.	ibe.	imbe, ebe.
- fish.	sunatoru.	tschapp koiki.	inkgari.
- fly.	hasiru.	basi, tjasi.	choinpu.
- catch birds.	toraheru.	tsikapp koiki.	zefp koigi.
- get.	motomu.	tsipapa.	okuwa.
- give.	jaru.	jenikore.	ingori.
- go.	ajumu.	apukasi.	spkas.
- hear.	kiku.	nu, inu, kunu.	nun.
- kill.	korosu.	rapeke, ronno.	raigüakka.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
To laugh.	warafu.	mina.	aina.
" lay.	jasumu.	sini.	schine.
" live.	inotsi aru.	sikkinu.	schikfnu.
" pain.	itamu.	itasjasja.	
" row.	funewokogu.	tsipu.	zipowa.
" run.	hasiru.	hojubu.	chojubu.
" see.	miru.	nukar.	nogaro.
" sing.	utau.	jûgari.	iukgari.
" sleep.	nemuru.	mokoro.	mojuru.
" speak.	itaku.	itakuwa.	idawuwa.
" stand.	tatsu.	rosike.	roschki.
" steal.	nusumu.	ikka.	ikka.
" walk.	ajumu.	apakasi.	apkas.
" weep.	naku.	tsitsi.	tsitsiwa, zjssiwa.

10. Personal Pronouns.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
I	watak's waré.	ku, kuannit, tsjô-	kani tschogai.
You (familiar).	karera.	inki angur.	(kai. suu udari.
You.	omai, anata.	iani, i, itsjôkai.	jani itschogai.
He.	kare, ano fito.	iki aja angur' (ille)	ikoro.
Ye.	omai gata.	inki utare.	itschogai udari.
We.	watak's domo.	tsjô kai utare.	toogai udare.

11. Demonstrative Pronouns.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
These.	'kono.	tan, tanbe, aac.	ani.
Those.	sono.	pu.	
This.	kore.	tapu.	
Each.	koto.	kesi.	keschi.
Who.	sore.	neni.	nini, nen.
Which.	itsure.	ikijaan.	
Such.	sajô.	kesunnari	

12. Numerals.

<i>Engl.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
1	fitots'.	sinepp, sine, schinep L.	schnepf.
2	f'tats'.	thupp thu.	tupf tup.
3	mits'.	repp, reepu L.	repf.
4	jots'.	inepp, inepu L.	inepf.
5	itsuts'.	asikinepp, aschikinepu L.	aschikinipf.
6	muta'.	iwanbe.	juwambi.
7	nanats'.	aruwanbe.	aruwambi.
8	jats'.	thupe sjanbe.	tubi schambi.
9	kokonots'.	sineb sjan.	schnebi schambi.
10	tô (towo).	wanbe.	wambi.
20	hatats (nisju).	hots, chozu L.	scheehoz, choz.
50	gosju.	wambe i rehots.	wambi irichoz.
100	momo.	asikne hots.	aschi nichoz.
1000	tai.	asikine sine wane hots <i>i. e.</i> 5. 10. 20.	aschi kini schine wane choz.
1 st .	itsiban.	teppakke.	
2 nd .	niban.	nosike.	
3 rd .	sanban.	reth tanta, reptanta.	
Once.	itsi do.	sine sjui.	schini.
Twice.	ni do.	thusjui.	schini.

13. Adverbs.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
Afterwards.	sonotsugi.	imakake.	
At present.	ima.	tane.	tani.
At last.	tsuini.	aine.	
Formerly.	mukasi.	fusiko.	
Gradually.	ohi ohi.	ubi ubi.	ja ja ukere.
Here.	koko.	tan kotau ta.	changino.
How much.	iku.	heabakkuno.	chimbaguno.
Lately.	kono aida.	tetai.	
More.	mato.	sjui.	schini.
No.	ija.	kotsjan, koban.	
Not.	na.	sjomo.	schiommo.
Now.	ima.	tase.	tani.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
Not yet.	imada.	naa.	
Of course (yes).	naruhodo.	nokon, eowun.	
Often.	tabi tahi.	sju sjui.	
Quite.	nokorasu.	nenai.	
Therefore.	sorenitsuite.	ne waanberisju.	
Today.	konnita.	tanto.	
To-morrow.	asta.	nisjatta.	nischatta.
Well then.	iza iza.	sita sita.	
Why.	itsure.	nekouta.	nigonda.
Where.	toko.	ine kontawta.	nida.
Yes.	hei.	jise, jese.	
Yesterday.	sakusita'.	numani.	numani.

14. Affixes and Conjunctions.

<i>English.</i>	<i>Japanese.</i>	<i>Aino on Jezo.</i>	<i>Aino on Krafto.</i>
all.	mina.	obitta.	
as.	tokini.	ike, tsiki.	
and, still.	sosite, to.	kanna.	
because.	jotte.	kusju.	kuschu.
else.	bets'.	sinnai.	
or.	mata.	ta, sjui.	schiai.
out, of.	jori.	orowa.	
seldom.	mare.	kemiau.	
since.	joriwa.	orowano.	
too.	hanahatasi.	sitoma.	
though.	ihetomo.	jakka.	
on, in.	ni.	ta.	
with.	tomoní.	ite sianneno, sni.	
without.	nasi.	isjamu.	ischamu.

PRODUCTIONS OF THE AINO LANDS.

Up to the opening of the harbour of *Hakodate* (Sep. 1855), the few navigators who visited the *Aino* lands with a scientific aim, staid too short a time and under too restricted circumstances on the coasts of *Jezo* and *Kraflo* and the *Kurils*, to be able to gain even a slight acquaintance with the productions of these islands, which cover a surface of more than 2000 □ miles. To them therefore, we are indebted but for small additions to our knowledge of the *Fauna* and *Flora* and of the geological constitution of these lands. Yet, for so far as the narratives of the voyages of Commodore Perry and of Wilhelm Heine may serve as prospectus of a physical examination of those regions, we must expect still less in that respect from the American expedition. On the other hand we have become acquainted with the most important natural curiosities of these islands, and especially of *Jezo*, by communications, both written and verbal, from able Japanese who have visited it. All that has thus come to us from European and Japanese sources, we have brought together in our description of Japan, * and to that, we call the attention of those who wish to make themselves more particularly acquainted with the subject. Yet, our communications leave much to be desired, and can only be regarded as

* Nippon, VII, p. 244. "Die Naturerzeugnisse von *Jezo*, *Kraflo* und den *Japanischen Kurilen*."

an index to the great book of nature, of which these lands furnish such remarkable objects. In the same way as I have noted down my geo-hydrographic, ethnographic and philological observations, with the laudable intention of affording navigators some guide on their further voyages to those shores, so a short oversight of the productions of the hitherto so little known Aino lands will not be out of its place here.

THE ANIMAL KINGDOM.

Mammillaria. Our list from this kingdom of nature is pretty complete, and a lapsus is thus filled up, which hitherto existed between the natural history of the Japanese islands and the continent of East Siberia and Kamtschatka. *

Bat.	Pteropus spec.	<i>Atapo</i> (Aino).	<i>Ohokómuli</i> (Jap.)
"	Vespertilio camtschaticus?	<i>Kabap.</i>	<i>Itatsi kómuli.</i>
Mole.	* <i>Talpa</i>	<i>Wogura F. J.</i>	<i>Ihutsikere.</i>
Shrewmouse.	<i>Sorex</i> spec.	<i>Sjatsiri.</i>	<i>Wogura.</i>
"	" "	<i>Ubasitsironop.</i>	<i>Dinezumi.</i>
Bear.	* <i>Ursus arctos</i> (ferox).	<i>Hokjuk, sijnk</i> (mas) <i>Ojan</i> (fam).	<i>Kawanezumi.</i>
"	* <i>Ursus collaris.</i>	<i>Borep, Seberi?</i>	<i>Okokuma.</i>
"	" <i>thibetanus</i> F. J.	<i>Tsira mante.</i>	<i>Fikuma, akakuma.</i>
Martin.	* <i>Mustela melampus</i>	<i>Thusjanike.</i>	<i>Ten.</i>
"	F. J.		
"	* <i>brachyura</i> F. J.	<i>Hoinu.</i>	<i>Jezo-ten.</i>

* Of those marked thus * we have seen the skins, and we have drawings of those marked †. The rest are classified according to the Japanese synonyms of the Aino names. The letters F. J. are placed behind the names of those animals in our Fauna Japonica.

Fish-Otter.	* <i>Lutra vulgaris</i> F. J.	<i>Izjamani.</i>	<i>Kawa uso.</i>
Sea-Otter.	* <i>Enydris marina.</i>	<i>Rakko, Binnep</i>	<i>Rakko.</i>
		(mas).	
Wolf.	<i>Canis lupus.</i>	<i>Ose kanmi.</i>	<i>Oho kami.</i>
Fox.	* * <i>vulpis.</i>	<i>Fure tsup, i. e.</i>	<i>Kitsne.</i>
		<i>vulpis rubra.</i>	
	* * * <i>argen-</i>	<i>Kunne sjumari</i>	
	<i>tatus.</i>	<i>i. e. vulpis ui-</i>	
		<i>gra.</i>	
	- <i>lupus variet.</i>	<i>Sithunpi.</i>	<i>Sittukpen (Kuril.)</i>
	" " <i>variet.</i>	<i>Tironop.</i>	
Dog.	" <i>domesticus.</i>	<i>Sita, seta.</i>	<i>Kari inu.</i>
Cat.	<i>Felis Catus.</i>	<i>Meko.</i>	<i>Neko.</i>
Tanuki.	<i>Nictereutes vive-</i>		
	<i>rinus F. J.</i>	<i>Mojaku.</i>	<i>Tanuki.</i>
	<i>Canis? procyoidea</i>		
	<i>F. J.</i>	<i>Numari.</i>	
Hare.	<i>Lepus brachyurus</i>		
	<i>F. J. ?</i>	<i>Izjabo.</i>	<i>Usagi.</i>
Squirrel.	* <i>Sciurus varius.</i>	<i>Niuf.</i>	<i>Wogatsuki.</i>
- striped.	* <i>Tamias striatus.</i>	<i>Kasi kiri gusi.</i>	<i>Sima nezumi.</i>
Rat.	<i>Mus spec. maj.</i>	<i>Irimo.</i>	<i>Nezumi.</i>
Mouse.	" " <i>min.</i>	<i>Pon irimo.</i>	<i>Tanezumi.</i>
Hart	* <i>Cervus sika</i> F. J.	<i>Ják, Binnero</i>	
		(mas).	<i>Sika.</i>
	F. J.	<i>momambe</i>	
		(foem).	
Chamois.	† <i>Antilope crista</i> †.	<i>Jakusisi.</i>	<i>Niku.</i>
Reindeer.	* <i>Cervus Tarandus.</i>	<i>Thunakä.</i>	<i>Barok' (Chin.)</i>
Musk.	* <i>Moschus moschi-</i>		
	<i>ferus F. J.</i>	<i>Likon kamui.</i>	<i>Nora, Kusika.</i>
Wild swine.	<i>Sus leuco mystax</i>		
	<i>F. J.</i>	<i>Wottomun, §</i>	<i>Inosisi.</i>
Chinese pig.	" <i>sinensis.</i>	<i>Wotju farokke.</i>	<i>Bata.</i>

§ The following names are also given to pigs or wild swine and probably have some reference to sex, etc., and to which we wish to draw the attention of travellers: *woun-ommetousi*, *woun-hikata* and *woun-monorum*.

Sea-dogs or seals	} * <i>Phoca</i> <i>oceanica</i> .	<i>Situkari</i> .	
(without visi-		* • <i>barbata</i> .	<i>Jai thukari</i> †
ble ears.		* • <i>numularis</i> F.J.	<i>Kesjo</i> .
Seals with ears.	<i>Otaria ursina</i>	<i>Onnep, unen</i>	<i>Uminone'zo, Ot-</i>
	F. J.	(<i>mas</i>).	<i>tosei</i> .
		<i>Homapp</i> (<i>sem</i>).	
Sea-bears and			
sea-lions.	* <i>stelleri</i> F. J.	<i>Thukara</i> , ††	<i>Azarasi</i> .
Walrus.	<i>Trichecus Ros-</i>		<i>Asika, Kai-tata</i>
	<i>marus</i> .	<i>Sikaitanke</i> .	(<i>Chin.</i>)
Borkenwale.	<i>Rytina stelleri</i> ?	<i>Ikusibe, Lamu-</i>	<i>Unisika</i> .
		<i>tanasi</i> .	

There are also some names of animals mentioned, probably belonging to the family of the *Pinnipedia*: *Hekeppokoma* (a young *Phoca*?) *Ufuithukari*, *Amusine* or *Amossibe*, *Boniri* (a young or female seal) *Nigui*, *Tasjunbnikoro*.

Whales, so often mentioned in the *Log* of Vries's voyage, are certainly also found in the sea of the *Aino* lands, of the same sorts and varieties as known in that of the Japanese, who apply themselves most industriously to the whalefishery. The ignorant *Ainoes* seem to distinguish more sorts of them than the Japanese, who have for centuries committed their observations to writing and continually endeavoured to review and improve them.

In his *Aino* dictionary Mogami Toknai gives 19 names of whales (*Kuzira*), while the Japanese Linnæus Wono Lansan names only 16 sorts. According to our researches on Japan, and according to the critical

† The (*telari*) young are called *Retari Thukari* by the *Ainoes* on *Jezo*, and *Retatkor* by those of the *Kurils*.

†† A young *Otaria* is named *Rao*.

judgement of our learned fellow-labourer in the *Fanna Japonica*, Dr. H. Schlegel, the number of the sorts of whales observed by us in the Japanese waters and from drawings and descriptions prepared by Japanese, can only with certainty be said to be eight, viz.:

Dolphins.	}	Delphinus longirostris.	Jap.	<i>Sakamata.</i>
		" melas.	"	<i>Namino uwo.</i>
		" globiceps.	"	<i>Gotô.</i>
		" Orca.	"	<i>Iruka.</i>
Whales.	}	Balaena antarctica.	"	<i>Sebi-kuzira.</i>
		Balaenoptera artica.	"	<i>Iwasi-kuzira.</i>
		" antarctica.	"	<i>Sato, nagasu-kuzira.</i>
Cachalot.		Physeter macrocephalus.	"	<i>Makko-kuzira.</i>

We will here give what Toknai and other Japanese have regarded as the *Aino* names for whales, dolphins and cachalots to serve as a guide for further inquiry in the *Aino* lands themselves. *Tawajuk* (*Iruka* (Jap.); *Jukfunbe*; *Kenefunbe*, red of skin; *Nise funbe*, eats herrings; *Iwakotôma funbe*, is large; *Okina*, is very large; *moasjankur*, great; *Sjasijangur*, great; *Nokor*, has beards; *Ithutsikere*, has a long nose; *Fûrenbe*, has red blubber; *Oakansi*, a big belly; *Asbekôrû*, is like a large mackerel; *Kuttare*, also called *Otakoi*, eats herring; *Okirike*; *Isjobonbe*; *Jaitesi*; *Taneibe*, and *Thunai*.

In however great numbers whales may appear on the coasts of the *Aino* lands, they are but seldom caught by the *Ainoes*. They however consume the flesh and train of such as are stranded. The Dutch navigators have seen most whales passing in shoals from the north to the south. Not long ago, the American expedition fell in with shoals of 300 whales to the east of Japan. The *Ainoes* also tell of a seamonster *Okina*, which

is so large that it could devour a whale. Nothing farther of it has however been seen than its back. This fable is probably founded on the large shoals of whales or dolphins common to those seas; they also relate that the whales are pursued and killed by a dolphin much like the *Iruka* (*Delphinus Orca*), called by the Japanese *Kami kiri* i. e. sawfish.

Birds. In proportion to the number of birds known in East Siberia, Kamtschatka and Japan, * the number of those observed by European naturalists and the Japanese on *Jezo* and *Krafzo* is but small. These are:

Falcon.	<i>Falco communis.</i>	<i>Tsirikoiki</i> (Aino)	<i>Taka</i> (Jap.)
Hawk.	<i>Accipiter nisus.</i>	<i>Kuukuth.</i>	<i>Fitaka.</i>
Ice-hawk.	" "	<i>albus.</i>	<i>Tetari Kuukuth.</i>
"	<i>Spizaetes orientalis.</i>	<i>Tekku.</i>	<i>Usu kohoritaka.</i>
Fish eagle.	<i>Haliaeetus pelagicus</i> <i>F. J.</i>	<i>Kaba tsiri,</i>	<i>Ra- Iso wasi.</i>
Sea eagle.	" "	<i>albicilla.</i>	<i>Sira tuff.</i>
"	<i>Pandion Haliaeetus orientalis?</i>	<i>Pgoak.</i>	<i>Kak Kuso wono wasi.</i>
Kite.	<i>Buteo Japonicus</i>	<i>Jattowe.</i>	<i>Sima tobi.</i>
Eared Owl.	<i>Otus semitorques</i>	<i>F. J.</i>	<i>Kamui tsi Kapf Mimitsuk.</i> { <i>i. e. Ghost</i> <i>bird.</i>
Hooting "	<i>Strix bebo.</i>	<i>F. J.</i>	
Caliope.	<i>Silvia Caliope.</i>	<i>Hokitsi.</i>	<i>Nokoma.</i>
Nightingale.	" "	<i>vel Luciola spec.</i>	<i>Baketijo.</i>
Wag-tail.	<i>Modacilla lugens</i>	<i>F. J.</i>	<i>Sekuro sekirei.</i>
"	" "	<i>spec.</i>	<i>Tokhakun.</i>

* Compare *Nippon*, VII, l. c. page 254 sq., where a list is given of the birds found by Pallas, von Kittlitz and von Middendorff in those regions.

Tomtit.	<i>Parus major.</i>	<i>Fuksatsiri.</i>	<i>Sizjukara.</i>
Longtailed-tit.	" <i>caudatus</i> var.		<i>Matsumaō-Jen-aha.</i>
House sparrow.	<i>Fringilla domestica.</i>	<i>Amanitsikapf.</i>	<i>Suzume.</i>
Lark.	<i>Alauda alpestris</i>	<i>Rikintsiri.</i>	<i>Fibari.</i>
	<i>F. J.</i>		
Blackbird.	<i>Turdus spec.</i>	<i>Sike.</i>	<i>Muku.</i>
Starling.	<i>Sternus cinerarius.</i>		<i>Jezo-muku.</i>
Raven.	<i>Corvus Japonensis.</i>	<i>Hasikuro.</i>	<i>Karazu.</i>
Crow.	" <i>Corone?</i>	<i>Jeppirka.</i>	?
Magpie.	<i>Pica varia.</i>		<i>Kasasai.</i>
Blue woodpecker.	<i>Garrulus Brandtii</i>	<i>Barken.</i>	<i>Kasitori.</i>
King-fisher.	<i>Alcedo spec.</i>	<i>Ijami.</i>	<i>Kagesu.</i>
	<i>Picus awokera</i>	<i>Isokitoki.</i>	<i>Awokera.</i>
	<i>F. J.</i>		
Cuckoo.	<i>Cuculus canorus.</i>	<i>Toppits.</i>	<i>Hotodokis.</i>
House pigeon.	<i>Columba domestica.</i>	<i>Toita.</i>	<i>Ijebato.</i>
	" <i>gelastris</i> <i>F. J.</i>	<i>Kuzujel'.</i>	<i>Jamabato.</i>
Green pigeon.	" <i>Sieboldii</i> <i>F. J.</i>	<i>Thuthut'.</i>	<i>Acobato.</i>
Chicken.	<i>Gallus domestica.</i>		<i>Nisa tori.</i>
Quail.	<i>Coturnix vulgaris</i>		<i>Usura.</i>
	var. <i>F. J.</i>		
Bustard.	<i>Otis tarda?</i>	<i>Utakan.</i>	<i>Noyan.</i>
Parrot plunger.	<i>Arca torda</i>	} <i>Atujantsikapf.</i>	} <i>Utoō.</i>
"	" <i>monoceros.</i>		
"	<i>Marmot cirrhata</i>	<i>Jeppirika.</i>	
Plunger.	<i>Podiceps spec.</i>	<i>Aptotsikapf.</i>	<i>Ame tori.</i>
"	" "	<i>Wakkatoitoi.</i>	
"	<i>Colymbus spec.</i>	<i>Imoton.</i>	<i>Aisa Kamo.</i>
	<i>Carbo bicristatus.</i>	<i>Uriri.</i>	<i>Siman.</i>
Wild duck.	<i>Anas boschas.</i>	<i>Sikobetsja.</i>	<i>Makamo.</i>
Winter teal.	" <i>crecea.</i>	<i>Kobettsja.</i>	<i>Kakomo.</i>
Duck.	" <i>spec.</i>	<i>Thura.</i>	
"	" "	<i>Kakkari.</i>	
"	" "	<i>Kobe.</i>	
"	" "	<i>Kakkjo.</i>	

Duck	Anas spec.	<i>Kaori.</i>	
"	" "	<i>Jaureta.</i>	
Wild goose.	Anser hyperbo-	<i>Kuitopp.</i>	<i>Kari.</i>
	reus?		
Tame "	" cinerens do-		<i>Magan.</i>
	mesticus F. J.		
Goose.	" spec.	<i>Kuwetou.</i>	
Mew.	Larus melanurus	<i>Kabin.</i>	<i>Kamome.</i>
	F. J.		
Petrel.	Puffinus tenuiro-	<i>Irounetsikapp.</i>	<i>Okino Kamome.</i>
	tris F. J.		
Ruff.	Tringa variegata.	<i>Kui, kui.</i>	<i>Siki.</i>
"	" meleagris.	<i>Thurapfta-tsiri.</i>	<i>Famasiki?</i>
Woodsnipe.	Scolopax rusti-	<i>Matsjo.</i>	<i>Mijakotori.</i>
	cula.		
Crane.	Grus cinerea var.	<i>Sururun.</i>	<i>Tsuru.</i>
	F. J.		
White heron.	Ardea alba.	<i>Bettsjo.</i>	<i>Sirasaki.</i>

In Toknai's dictionary there is still a long list of birds, but without the addition of the Japanese synonyms. However strangely these *Aino* names may sound, we will give them here in order to give travellers an opportunity of pursuing their inquiries. *Orelara*, *Thurja*, *Arats*, *Kakakjo*, *Fússetsiri*, *Korokakkun*, *Harikeu Wanwo*, *Sirar'va*, *Ithurahisika*, *Itoki toki*, *Ainusetsiri*, *Omanruitsiri*, *Bakkunne*, *Uwetsiritsiki*, *Nuppukaoren*, *Hokkiure*, *Ussetoita*, *Oppikepike*, *Worunkakken*, *Kuitopp*, *Kaori*, *Hekatsitsiri*, *Jaurelara*, *Furesjamsiri*, *Horutsiri*, *Okeura Reraoki*, *Hometsiri*. We repeat our remark here, that *Tsikapp* signifies a large bird, and *Tsiri* a small one, and that several names are nearly the same as those already given.

Reptiles. Most of this class of animals are found in the south of *Jezo*, and for the most part agree with those of the north of Japan.

Turtle.	<i>Emys</i> v. <i>Trionyx</i> .	<i>Itsinke</i> (Aino).	<i>Game</i> (Jap.)
Newt.	<i>Stincus quinque-</i> <i>lineatus</i> F. J.	<i>Haran.</i>	<i>Tolage.</i>
Snake.	<i>Coluber quadri-</i> <i>virgatus</i> F. J.	<i>Hasikuro kamoi.</i>	<i>Kurokutsinaba.</i>
"	<i>Coluber virgatus</i> F. J.	<i>Fagonoka.</i>	<i>Mugi wara febi.</i>
Adder.	<i>Trigonocephalus</i> <i>Blomhoffi</i> F. J.	<i>Tokko kamoi.</i>	<i>Manusi.</i>
"	<i>Trichonocephalus</i> spec.	<i>Tanne Kamoi.</i>	<i>Siro febi.</i>
"	"	<i>Kinasitonkur'.</i>	
Common toad.	<i>Bufo vulgaris</i> F. J.	<i>Terekeibe.</i>	<i>Kaheru'.</i>
Green frog.	<i>Rana esculenta</i> F. J.	<i>Toron kamoi.</i>	<i>Kawadsu.</i>
Frog.	" spec.	<i>Kekkettsch.</i>	
"	" <i>rugosa</i> F. J.	<i>Woots'.</i>	<i>Tsutsikaheru.</i>
Tree-frog.	<i>Hyla arborea</i> F. J.	<i>Kokekets.</i>	<i>Asogaheru.</i>
"	" ? spec.	<i>Ibi.</i>	
Water salamander.	<i>Triton</i> spec.		<i>Wimori.</i>

They also speak of a sort of Seal *Sitku-Kari* resembling a tortoise, probably a sort of *Sphargis mercurialis* or *Chelonia*, which is sometimes washed on to the shores of *Jezo* by hurricanes or by the streaming of the sea.

Fishes. The accounts of the immense quantities of fish observed by the old Dutch navigators along the coasts, and especially at the mouths of the rivers of the land of *Jezo*, do not seem exaggerated when we compare them with what modern navigators tell us of certain kinds of fish, such as salmon, herring and sardinias, in the northern part of the sea of Japan, in the so-called Gulf of Tartary and in the sea of *Ochotsk* and *Kamtschatka*. They also speak of shoals of fish stopping up the mouths of the rivers and estimate the quantity by ship's cargoes. The same is told

by credible Japanese travellers; among others Mogami Toknai has assured us, that from the *Isikari* alone, the largest river on the west coast of *Jezo* during his residence there (1785) no less than twelve thousand kok (3,600,000 lb.) salted and cured salmon (*Salmo leucocephalus* and *Salmo callaris*) was brought away, and that along the coast of *Jezo* shoals of a sort of red plaice are to be found (*Trygon Akajei*) covering from 126 to 250 square yards. The number of species of fish known to us as frequenting the coasts, the rivers and the lakes of Japan, amounts to above four hundred, along the coasts of China to about two hundred, and those of the northern part of the Great Ocean to about as many more. Compared herewith however, the number of species known as peculiar to the sea and rivers of the *Aino* lands is small. But this does not exclude the probability of a great variety of species being found there, as also many from other seas; for, from their natural impulse for remote migrations and impelled by a powerful, eternal motive power, the Japanese stream, fishes from both higher and lower latitudes are carried thither. Through European travellers we have learned the names of but few species from the sea and rivers of the *Aino* lands; the information on that head, for which we are indebted to Japanese established on the coasts of *Jezo* and *Krafftö*, is also small, because they did not look for scarce sorts, but for such as served for food in their own country or were calculated for the fish trade. The more welcome therefore to navigators will be the list of fish, which we here present them:

Sea-perch.	Nippon spinosus F. J.	Kankai (Aino).	Matsmaē tara (Jap.)
"	Perca-labrax Ja- ponicus F. J.	Airo.	Suruki.
Gurnet.	Dactyloptera spec.	Fare sepp.	Katago.
Goldperch.	Chrysophris ma- jor F. J.	Fare sepp. *	Aka dai.
Goldperch.	Chrysophris spec.	Ninijesepp.	
Mackrel.	Scomber pneuma- tophorus F. J.	Sjuba.	Saba.
Tunny.	Thynnus pelamys F. J.	Tanneibe.	Katsuwo.
"	" Sibi F. J.	Sjunbi.	Sibi.
Mackrel?	" spec.	Pukka.	
"	Elacate mottak.		Masu.
"	E. bivittata F. J.		
"	Seriola aurea vit- tata F. J.	Tsiwasjan.	Bari.
?	Aspidophorus aci- penserinus.	Tsirosineibe.	Rokkak.
"	" superciliosus.		
"	" stegophthal- mus.		
"	Cottus interme- dius.		Jezo-gotsi.
"	Hemilepidotus. Tilesii.		
"	Epinephelus cili- atus.	Potoi.	Tanago.
"	Pleuronectes stel- latus.	Tantaka.	Karei.
Plaice.	" spec.	Kabarin.	
"	" "	Kasibisi.	
Sole.	" "	Simasibo.	Firame.
"	" "	Heben.	Oho frame.
"	" "	Herekusi.	
	Silurus japonicus F. J.	Uta.	Namazu.

* Fare red, sepp fish, for both are red fish.

Roach.	Cyprinus conirostris F. J.	Ruwokom.	Funa.
	Hemir amphus sajori F. J.	Fuube deppo.	Sajori.
Salmon.	Salmo lagocephalus.	Sibe.	Sake.
"	" Proteus.	Sjankenbe.	Mazu.
"	" sanguinolentus.	Urupp.	Beni-Mazu.
"	" spec.	Tsirni.	Ito.
"	" "	Hemoi.	
"	" "	Tjarokun.	
"	" "	Wowo.	
"	Saurus?	Tsuppo.	Ukui.
Salmon.	Saurus?	Ururui.	Kutaki uwo.
Herring.	Clupea gracilis F. J.	Ponsepp.	Iwasi.
"	" ?	Heroki.	Kado v. Nisin.
?	Tetraodon spec.	Akamkorbe.	Eugu.
"	" "	Jurni katepp.	
	Orthogosisicus mola F. J.	Ilinabo.	Manbo.
Sturgeon.	Acipenser Helous.		
Shark.	Mustelus vulgaris.	Wonne.	Wani.
Skate.	Trijgon Akajei F. J.	Aitsi korbe.	Akajei.
"	Raja?	Karma.	Same.
"	"	Tsikobakui.	
"	"	Ihesjarkorbe.	
?	Heptastema cirrhatum F. J.	Nakaribe.	Jodamusu.
Lamprey.	Petromyzon camtschaticus *	Sjumarop.	Jatsme-unagi.

Some *Aino* names of fishes we have not been able to identify; these are: *Iunubeibe*, *Takutaku*; *Siribokke*,

* The Kamtschatdale Lamprey has but seven *spiracula*; the Japanese however call it *Jats'me-unagi*, i. e. eight eyed eel and count the eye on each side with the seven *spiracula*; It is therefore also a *Heptastema*.

Sjokorsepp, *Furarui*, *Rannibe*, *Kasinube*, *Pontoksi*.

Mollusks. The mollusca we know of the *Aino* lands are mostly such as are eaten there or collected for the Japan trade; these are:

?	<i>Octopus areolatus</i> .	<i>Athui nau</i> (Aino)	<i>Tako</i> (Jap.)
"	" <i>granulatus</i> .	<i>Athui ne</i> .	<i>Iwa tako</i> .
Cuttlefish.	<i>Sepia japonica</i> .	<i>Fussanna</i> .	<i>Ika</i> .
"	" ?	<i>Faziani</i> .	
"	<i>Sepiola</i> ?	<i>Masi tanbe</i> .	
"	<i>Loligo brevis</i> ?	<i>Mattajana</i> .	
Oysters.	<i>Ostrea spec.</i>	<i>Biba</i> .	<i>Kaki</i> .
"	<i>Pecten</i> .	<i>Aikedekke</i> .	<i>Tadekai</i> .
"	" "	<i>Akkesesi</i> .	
"	<i>Pina</i> .	<i>Apnisei</i> .	<i>Kami</i> .
Muscle.	<i>Mytilus spec.</i>	<i>Hankatsjui</i> .	<i>Ikai</i> .
"	<i>Cardium</i>	<i>Tajakasai</i> .	<i>Akakai</i> .
"	" "	<i>Teibojetsup</i> .	<i>Sizimi</i> .
"	" "	<i>Tinrp</i> .	
"	<i>Venus</i> .	<i>Iasibebots</i> .	<i>Sira famakuri</i> .
"	" "	<i>Herenasi</i> .	
"	" "	<i>Kaburusai</i> .	
"	" "	<i>Heurokke</i> .	<i>Asari</i> .
"	" "	<i>Urukke</i> .	
"	<i>Haliotis japonica</i> .	<i>Aibe</i> .	<i>Awabi</i> .

Some other mollusks are also mentioned: *Petsi*, *Tsitani*, *Trusjünke*, *Kauputh*, *Ratutsjüke*, *Simabara-tets*, *Sikikemsjui*. The *Tripang* fishery on *Jezo* (there called *Kakurantu*, and by the Japanese *Irigo* or *Kingo*) is very important. Edible lotc named *Kurage* is also collected and dried there.

Crustacea. The few species of *Crustacea* we have been able to identify from Japanese sources as belonging to the *Aino* lands, afford very important results for their geographical extent. We there find mentioned the rare *Craprus Japonicus* F. I. (called *Anbajaja* in

the *Aino* language, and *Dsu gani* in Japan) which inhabits the rivers of *Jezo*, and the gigantic sea crab *Inachus kaempferi* F. J. (*Murikana* (*Aino*) *Sima gani* or *Taka asi-gani*, i. e. long legged crab (*Jap.*) discovered by us on the east coast of Japan. This monster crab, of which Engelbert Kaempfer figured an arm, and the renowned Steller also found an arm in the Gulf of *Alutora* in *Kamtschatka* sufficient to satisfy a hungry man, * is sometimes also found on the coast of *Jezo*, and it is affirmed that it sometimes attains the size of eight or ten Sjak (feet). The largest we ever saw had arms (*Chelae*) four feet long. One also finds there a *Palinurus*, *Holokerki* (*Aino*) *Jebi* (*Jap.*); the *Astacus Japonicus*, *Tekunbe korbe*; a *Squilla Heka korbe* (*Aino*) *Sjaku* (*Jap.*) and several other crabs, which are in general named *Hiko kunbe*.

Insects. Of these we can only offer a small list, in which however the common individuals of the species are sketched: of Spiders (*Kumo*, *Jap.*) are found a *Jawosike* and a *Jatem*, and also an *Exodes*, *Jani*, *Jap.*) *Baraki*; also a bastard-spider, *Phalangima*, from the sap of which the poison for their arrows is prepared. Farther are named, of beetles: *Lucanus spec.*, *Ninakikiri* (*Aino*), *Hasamimusi* (*Jap.*): a *Buprestis*, *Sino kane haram* (*Aino.*), *Kinkwako?* (*Jap.*); glowworm, *Lampiris*, *Nisekep* (*Aino*), *Hotaru* (*Jap.*): a cricket, *Gryllus*, *Sibebe* (*A.*), *Kirikirisu* (*J.*) bees, *Apis melifera* *Sisjója* (*A.*), *midsuhatsi* (*J.*); Wasp, *Vespa*, with white spots *Majuksjója* (*A.*), *Hatsi* (*J.*); horsefly, *Oestrus*, *Sirawo*

* Engelbert Kaempfer, *Beschrijving van Japan*, p. 100, Tab. 14, A. *Mémoires de l'Académie de St. Pétersbourg*, Tom. V, p. 358.

(*A.*), *Apú* (*J.*); earth-wasp, *Pompilus*, *Jasjója* (*A.*) *Tsudsibats* (*J.*); water nymph, *Libellula*, *Hankkatsjui* (*A.*), *Tonbo* (*J.*); butterfly, *Mareu* (*A.*), *Tjó* (*J.*); moth, *Moset-sikap*; gnat, *Culex*, *Tipula*, *Simulium*; *Ithutanne*, *Kamurusju*, *Ibiro*, *Irairai*, *Itsjottsjaré* (*Aino.*), *Ka* and *Futó* (*Jap.*); louse, *Urki* (*A.*), *Sirami* (*J.*); fleas, *Taike* (*A.*), *Nomi* (*J.*); millipedes, *Julus*, *Iteniakkiri* (*A.*), *Makade*, (*J.*); and worms, *Tonin*, *Rutswó* (*A.*), *Mimizú* (*J.*) We feel convinced that so many strange words must be tiring for our readers; their utility however to navigators and travellers in the *Aino* lands, in their inquiries whether in natural history or philology, has encouraged us to the completion of so difficult a literary labour, and we may therefore claim their indulgence.

THE VEGETABLE KINGDOM.

Of no islands discovered during the last two centuries, do we know less of the productions of the vegetable kingdom, than of *Jezo*, *Kraftó* and the southern *Kurils*. *Lapérouse* and *von Krusenstern*, who during their memorable voyages round the world, visited part of the shores of the *Aino* lands, were there for too short a time, in a season too unfavourable for vegetation and altogether under circumstances too unfavourable to become acquainted more than superficially with the *Flora* of those islands. The few herbal collections too, which were brought together by the learned men who accompanied them, have been lost or not properly made known. *Broughton*, whose services to hydrography can not be sufficiently valued, also fixed his attention on the plants

of those islands and has communicated a list of plants collected on *Jezo*, * while Golownin in his imprisonment only became acquainted with some edible and useful plants. Dr. Schrenk, who not long ago (Feb. 1856) made an excursion from the *Amur* land to *Kraflo*, saw the *Flora* there in mid winter and has therefore only been able to describe it in its winter dress; while the few lines "compiled from the original notes and Journals of Commodore Perry" † respecting "gardens, § culinary vegetables** and vegetation †† are of such meagre contents that no scientific additions to the *Flora* of the *Aino* lands are to be expected from this expedition. We must therefore go to Japanese sources for our knowledge of the herbarium of the *Aino* lands, which, lying as they do between the old and new worlds, will offer us much that is remarkable. And these sources are the richer because among the Japanese the knowledge of plants is more general than that of animals

* Broughton, *Voyage of discovery*, l. c. p. 392.

† Francis L. Hawks' *Narrative* l. c. page 511 & 519. To give an idea of the insignificance of the herbal communications extracted from the notes and journals of the commodore and published in our century, we here give the whole literal contents:

§ "These are tastefully planted with fruit and shade trees, and bounded with green hedges while beds of variegated flowers contrast their bright hues with the green verdure of the foliage and the lawns of grass."

** "Onions, a few sweet potatoes and radishes are the chief products." — Sweet potatoes or *Batatas edulis* do not thrive on *Jezo*.

†† "There are several beautiful copses of pines and maples near the town, some fruit trees and flowering shrubs, and the vegetation upon the lower acclivities of the surrounding hills is vigorous. A large variety of northern plants, birches, spiraeas, laburnums, wake-robins, and others, clothe the sides, and afford a scant fuel to the poor."

and minerals, since the vegetable kingdom furnishes them with the greater part of their food and their most efficacious medicines. We have also been enabled to give an oversight of a great part of the plants which characterise the *Flora* of *Jezo* and which are there cultivated for food or other domestic purposes, by lists of those found on *Jezo* and *Krafto*, explained by Japanese synonyms and by dried and living plants which we obtained from Japanese friends out of *Jezo* during our residence in *Japan*. We have therefore, in the before-mentioned division of *Japan*, gone more into details on this subject, and shown the relation of the *Flora* of the *Aino* lands, for so far as it is known to us, and to the neighbouring lands of the old and new worlds. *

We will merely remark here that of 342 species, 175 belong to the *Flora* of *Japan*, 60 to that of *East Siberia*, 50 to *North-China*, 38 to *Kamtschatka*, 26 to the region of *Ochotsk* and 16 sorts to *North-America*, of which 8 range up to the regions of the North pole.

Dicotyledoneae. †

I. Papilionaceae.

1. *Astragalus lotoïdes*, LAM., *Genge bana*. J.
2. *Crotolaria eriantha*, S. & Z., var. fol. angustioribus, *Tannkime*. J.
3. *Ervum tetraspermum*, L., *Susume no Ientô* J.
4. *Indigofera*, *Iwa fusi*, J., v. s.
5. *Lathyrus*, *Renriso*. J.
6. *Lespedeza pilosa*, S & Z., *Neko fagi*. J.
7. *L. Sinkepf.* A.
8. *Lotus dichotomus*, STEB., *Kôgane Aana* J.

* Nippon VIII. l. c. pag. 273 etc.

† The edible and other useful plants are marked thus *

9. *Orobus japonicus*, WEB., *Nanten fagi* J.
 *10. *Pachyrrhizus thunbergianus*, s & z., var. *hispidus*, *Kudzu-Kud-sara* J., *Woikara*, for rope.
 *11. *Phaseolus Mungo*, L., *Atsuki* J., *Anthuki*.
 *12. *Ph. vulgaris*, L., *Bizinname* J.
 *13. *Pisum sativum*, L., var. *quadrat.*, *Jentō* J., *Pasiktara*.
 14. *Sarothamnus scoparius*, WIM., *Jenista* J.
 *15. *Soja hispida*, MÖNCH., *Mame* J.
 16. *Sophora japonica*, L., *Jendju* J., *Tokbeni* vel *Tsikbe*.
 17. *Thermopsis fabacea*, D. C., *Sendai lagi* J., *Kontikina*.
 18. *Vicia amoena*, FISCH.
 *19. *V. Faba*, L., var. *minor*, *Sora Smacie* J.
 20. *V. Karasojentō* J.
 *21. *Wistaria japonica*, s. & z., *Ko fudzi* J., *Kutsuts'*, for bow-strings.

II. Amygdaleae.

- *22. *Cerasus Kariaka*, A., *Sakura* - J., T. V.

III. Rosaceae.

23. *Fragaria indica*, AND.? *Febi itsiigo* J., *Funkikama furepp*.
 24. *Kerria japonica*, D. C., *Jama Buki*.
 25. *Potentilla discolor*, BGE., Sp. aff. *P. argentea*, L., A. S., *Kawarei saiko*, J.
 26. *P. spec. fol. digitat.*, *Kizi musiro?*
 27. *Rhodotypos kerrioides*, s & z., *Siri jamabuki* J.
 *28. *Rosa rugosa*, THB., *Hama nasi* J., *Mau*.
 29. *Rosa spec.*, *Iwara?* J.
 *30. *Rubus molcanus*, L? Th. Fl., *Faju itsiigo* J.
 *31. *R. Palmatus*, TH., *Itsigo* J., *Imare furetup*.
 *32. *R. triphyllus*, THB., var. *Jez.*, *Myama asi kudasi* J.
 33. *Spiraea Aruncus*, L., *Sjoma*, *torino asikusa* J.
 34. *S. palmata*, TH., *Busa simotske* J.

IV. Pomaceae.

35. *Amelanchier?* *Imotsiti*, A., *Jama nasi?* J., Spec. americanis aff.
 36. *Sorbus sambucifolia*, CHAM., *Nana ka mado* J., vel *Seikabara Kyeru fuveri*.

V. Lythraceae.

37. *Lythrum Salicaria*, L., *Mizo lagi* J.

VI. Haloragaceae.

- *38. *Trapa incisa*, s & z., *Hisi J.*, *Bekambe*.

VII. Geraniaceae.

39. *Geraneum pratense*, L., *Dai furosó J.*

VIII. Zanthoxyloae.

- *40. *Zanthoxylum piperitum*, D. C., *Sansjó J.*, *Kantsikamani*, spice.
 *41. *Z. Sikerebe*, A., *Ki wada J.*, *Wobakf*.

IX. Anacardiaceae.

42. *Rhus Toxicodendron*, L., *Tsata*, *urusi J.*, *Utisi*, poisonous.

X. Juglandaceae.

- *43. *Juglans Nesiko*, A., *Kurumi J.*, The Nuts are called *Ninum*.

XI. Euphorbiaceae.

44. *Euphorbia lathyris*, L., *Portosó J.*
 *45. *E. Sieboldiana*, M. & DECAISNE, *Kansui J.* *Ikatsuka*, medicinal.
 46. *E. Spec.*
 47. *Pachysandra terminalis*, s. & z., *Fákisó J.*

XII. Ilicineae.

48. *Ilex crispa*, SIEB., *Jama jadome J.*, *Jetókatoreni*.
 49. *I. integra*, TH., *Motsi no ki J.*, *Ljamun*

XIII. Celastrineae.

50. *Evonymus Banko*, A., *Majumi? J.*
 51. *E. Japonicus*, L., *Masaki J.* *Masja*.
 52. *E. Konkeni* A., *Majumi? J.*
 53. *E. Sieboldianus*, BL., *Majumi, J.*, var. *maj.*, *Ukepuni*.
 54. *E. subtriflorus*, BL., *Majumi J.* *Kasijapu*.

XIV. Polygalaeae.

55. *Polygala japonica*, Houtt., *Fime lagi J.*

XV. Acerineae.

56. *Acer Fusiini*, A., T. V.
 57. *A. rufinerve*, s. & z., *Konzi noki, J.*

- *58. *A. saccharinum* L? *Kaide J.*, *Tobeni*, sugar is prepared from the juice.

XVI. Tiliaceae.

- *59. *Tilia parvifolia*, EHRH., *Sinano ki J.*, *Koberegeb*, for rigging.

XVII. Caryophylleae.

60. *Alsine media*, L., *Hakobe*, J.
61. *Lychnis Senno*, s & z., *Senno J.*
62. *Stellaria* Spec. 2.

XVIII. Violaceae.

63. *Viola canina*, L., *Komono Asume J.*
64. *V. dissecta*, LEDEB., *Jezo sumire J.*, fragmenta quoque adsunt
V. palmatae ac *pedatae*.
65. *V. Motokina*, A.
66. *V. Patrinii*, D. C., *Sumire J.*

XIX. Droseraceae.

67. *Parnasia mucronata*, s & z., *Mameba trisō J.*

XX. Nelumboneae.

- *68. *Nelumbium speciosum*, Willd., *Hatsusa J.*, *Meja*, the root.

XXI. Nymphaeaceae.

69. *Nymphaea* Spec., *Hitsuzi gusa? J.*
70. *Nyphar Japonicum*, D. C. *Kōhone J.*, *Kapato*.

XXII. Cruciferae.

- *71. *Brassica chinensis*, L., *Tona J.*
*72. *B. orientalis*, L., *Abura na J.*, for oil.
*73. *B. rapa*, L., *Kab' na J.*
74. *Capsella Bursa Pastoris*, Mönch, *Nats na J.*
*75. *Cochlearia*, *Wasabi J.*, *Tsi* vel. *Kiseseri*.
76. *Draba hirta*.
*77. *Raphanus sativus*, L., var. *chinensis*, *Daitou J.*
*78. *Sinapis chinensis*, L., *Karasi J.*, *Kurasuf*.
79. *Thlaspi arvense*, L., *Gunbai utsiwa J.*
80. *Turritis hispida*, D. C., *Hatazo J.*
81 — 83. *Cruciferarum* species 3 indeterminatae.

XXIII. Papaveraceae, a) Papavereae.

84. *Chelidonium majus*, L., *Kusanowo J.*
 85. *Ch. uniflorum*, s & z., *Jama buki so J.*
 86. *Macleya cordata*, R. BR., *Takeni gusa, J.*
 87. *Papaver Rhoas*, L., *Bizinsô J.*
 b) Fumarieae.
 88. *Corydalis ambigua*, CHAM. & SLECHT., *Jengo sak' J.*
 89. *C. incisa*, PERS., *Marasaki geman J.*
 90. *C. Toma*, A., *Jezo jengosak' J.*
 91. *Dicentra pusilla*, s. & Z., *Goma kusa J.*

XXIV. Ranunculaceae.

- *92. *Aconitum chinense*, SIEB., *Tori kabuto J., Setasjurk*, medicina.
 93. *A. Kamtschaticum*, PALL., *Sjosinosjurk*. The sap of the root serves for poisoning the arrows.
 94. *A. tennifolium*, TUREZ., *Pontjurk*.
 95. *Adonis Sibirica*, PATRIN., *Fuk zju sô J. Kunau, Kumanbê.*
 96. *Anemone Fatabera*, A., v. p.
 97. *A. Muskarbe*, A.
 98. *A. parviflora*, MICH.,
 99. *Aquilegia Oda mahi J.*, pl. sicca *A. flabellatae* s. & z., ac. pl. *picta A. brevistylae* Hook, similior.
 100. *Caltha palustris*, L., *Jen ko sô J.*
 *101. *Coptis asplenifolia*, SALISB., *Seridano woren J.*
 102. *C. trifolia*, SALISB., *Mitsuba woren J.* medicinal.
 103. *Glaucidium palmatum*, s. & z., *Jama botan J.*
 104. *Hydrastis jezoënsis*, SIEB.
 105. *Paeonia albiflora*, PALL., *Jama sjak jak J.*
 106. *Pikyrosperma obtusifolium*, s. & z., var. *jezoëns.*, *Inu sjoma J.*
 107. *Ranunculus gregarius*, Pers., *Kits' neno botan J.*
 108. *R. japonicus*, THB., *Kinpoke J.*, v. s., *Bui.*
 109. *Trollius asiaticus*, L. ? *Sjurkôni.*

XXV. Magnoliaceae.

- *110. *Magnolia hypoleuca*, s. & z. *Hônoki? J. Ikajubni*, for quivers.
 111. *M. Fasini*, A., v. s. f., Sp. aff. *M. acuminata*, L.
 112. *Magnoliacea Moriune. Gjokran? J.*

XXVI. Lardizabaleae.

113. *Akebia clematifolia*, s. & z.

114. *A. Jezoënsis*, SIEB., *Jezo akebi* J.
 115. *A. lobata*, D. C., *Mits'ba akebi* J.

XXVII. Saxifrageae.

116. *Hoteja japonica*, M. & DECAIN., *Awamoriso* J.
 117. *Hydrangea acuminata*, S. & Z. *Asisai?* J., *Kikiuni*
 118. *Rupifraga sarmentosa*, THB., *Jakinosta* J.

XXVIII. Corneae.

119. *Cornus alba*, *Mitsugi* J. *Utsukanni*.
 120. *C. (Oreocornis) canadensis*, L., *Gozen tatsi bana* J., *Kakka*, K. O.

XXIX. Ampelideae.

121. *Cissus Fungosa*, A., *Tenta?* J.
 *122. *Vitis jezoënsis*, SIE., *Jezo buto* J., *Hats'*. Delicious black grape.

XXX. Araliaceae.

- *123. *Aralia edulis*, S. & Z., *Udo* J., *Itsjaribe* vel *Tsimakina*, the root.
 124. *A. pentaphylla*, THB., *Ukogi* J., var. *Horokajuni*.
 125. *Hedera Helix*, L., *Ki dsuta* J.
 *126. *Panax quinquefolium*, L., *Nincin* J., medicinal.

XXXI. Umbelliferae.

- *127. *Apium Seri* J. a sort of cellery
 128. *Archemora?* *Otakina*, A.
 129. *Cicuta?* *Kamoiwesina*, A.
 *130. *Daucus Carotta*, L., *Tats dai kon* J.
 *131. *Heracleum Tsima*, A.
 132. *Heracleum Bitu*, A.
 133. *Ligusticum?* *Setauben*, A.
 134. *Osmorrhiza japonica*, S. & Z.? *Naga sirami* J.
 135. *Peucedanum japonicum*, TH., *Bôfû?* J., *Kentaporo*.
 136. P.? *Uraibanisi*, A., *Bôfû?* J.
 137. *Pleurospermum kamtschaticum*, Hffm.? *Itara*.
 *138. *Sanicula elata*, Ham., *Naga sirami* J., *canadensis* A. S.
 139. *Umbellifera Kamoiisjukina*, A.
 140. U. *Worapp*, A., *Senkiu?* J.

XXXII. Ericaceae.

141. *Gautiera jezoënsis*, SIEB., *Kotołoni*.

142. *Rhododendron Netaanai*, A., v. s. f., M. S., *Nikko sjakunango* J.
 143. *Vaccinium Chamissonis*, BONG.? *Isunka*.

XXXIII. Myrsineae.

144. *Bladhia japonica*, THUMB., *Jabu kosi* J.

XXXIV. Primulaceae.

145. *Lysimachia japonica*, TH., *Ko nasubi* J.
 146. L. spec.
 147. *Primula cortusoides*, L.? *Sakura sô* J.
 148. *P. farinosa*, L., *Juki ware so* J.. *Konsumui*.

XXXV. Orobanchaeae.

149. *Boschniakia glabra*, MEY.?
 150. *Orobanche* spec.
 151. *Phacellanthus tubiflorus*, s. & z., *Jure dake* J.

XXXVI. Bignoniaceae.

152. *Catalpa*? *Sine*, A., *Jama kiri* J., *Ajusini*.

XXXVII. Scrophularinae.

153. *Linaria Jukktomabaek*, A.
 154. *Siphonostegia chinensis*, BGE., *Hiki jomogi* J.
 155. *Veronica Anagallis*, L., *Kawa Trisa*.
 156. *V. sibirica*, L.? *Jama tora novo*? J.

XXXVIII. Solanaceae.

157. *Physalis Alkegengi*, TH. Flor., *Hotsuki* J., *Hokisei*.
 158. Ph. *Totorep*, A.
 159. Ph? *Hotsuki*? J. *Toboroma*.
 160. *Solanum carolinense*, L.? *Katakina*.
 161. S. spec., *Hadaka hotsuki*? J., in insul. *Krafto*.

XXXIX. Convolvulaceae.

162. *Calystegia Soldanella*, v. BR., *Hama hirugabo* J.

XL. Asperifoliae.

163. *Bothriospermum* spec.
 164. *Cynoglossum* spec., *Hama murasaki*? J.
 *165. *Lithospermum erythrorhizon* s. & z., *Murasaki* J. Purple.

166. *Myosotis apula*, K. ? THUMB. Flora, *Kawara kens.*

XXI. Labiatae.

167. *Ajuga remota*, BENTH. ? *Zjumi ftoye* J.
 168. *Branella vulgaris*, L., *Utsubo kusa* J.
 169. *Clinopodium vulgare*, L., *Kuruma bana* J.
 170. *Dracocephalum argenteum*, FISCH., *Musja rindo* J.
 171. *Lamium amplexicaule*, L., *Hotokeno so* J.
 172. *L. barbatum*, S. & Z., *Odoriko so* J.
 173. *Lycopus virginicus*, L. ? *Inu sirone* ? J.
 174. *Melitis Roseomon*. J.
 175. *Nepeta incana*, THB., *Dan Kik'*.
 176. *Salvia Japonica*, THB., *Koma todome* J.
 177. *Scutellaria japonica*, *Tatsunami* J.

XLII. Gentianeae.

178. *Gentiana Kamitani*, A., *Sasa rindō* J.
 179. *G. Thunbergii*, GRISEB., v. s., *Haru rindo* J.
 *180. *Menyanthes trifoliata*, L., *Midugaziba* J. medicinal.

XLIII. Asclepiadaceae.

181. *Pycnostelma chinense*, BOE., *Sjo teijō kei* J.
 *182. *Urostelma Ikema*, A., vel *Penpu*. medicinal.
 183. *Vincetoxicum atratum*, S. & A. *Funawara so* J.

XLIV. Jasmineae.

184. *Jasminum praecox*, SIEB. *Obai* J.

XLV. Apocinaceae.

185. *Apocinum vesetum*, L., *Basikuromun*.

XLVI. Lonicereae.

- *186. *Lonicera brachipoda*, D. C., *Sni kadsura* J. medicinal.
 187. L. (*Xylosteum*) *coerulea*, L., *Fula kobasi* J.
 188. L. (*Xylosteum*) *nigra*, L., *Bijōtanbok'* J.. *Tonkaja*.

XLVII. Campanulaceae.

189. *Campanula Mukēkasi*, A., *Kikeo* ? J.

XLVIII. Compositae.

190. *Anacyclus* ? *Otauesikf*, A., v. p.

191. *Anandria dimorpha*, TURKZ., *Senbon jari* J.
 192. *Artemisia capillaris*, TH., *Kawra jomogi* J., *Retarvoja*.
 193. A. *Trikurbe*, A., *Jomoki*? J.
 194. A. *Kamoinoja* A., *Siro jomogi* J.
 195. A. *sachaliensis*, TILES., in insul. Krafto.
 196. *Aster Sjamoto*, A., *No kik*? J. T. V., in insul. Krafto.
 197. A. *tataricus*, L. fl.?
 198. *Cacalia acerifolia*, SIEB., *Momitsi kusa* J.
 199. C. *aconitifolia*, BOE., *Afare gusa*.
 200. C. *auriculata*, D. C.? *Takarako* J.
 201. C. *delphinifolia*, s. & z., *Momitsi haguma* J. *Ihanzami*.
 202. C. *hastata*, L., *Komuliso*.
 203. *Calendula officinalis*, L. var. *sineusis*, *Kin sen kwa* J. *Urajenskina*.
 204. *Cirsium japonicum*, D. C., *No asami* J.
 205. C. *Kamtschaticum*, LEDEB., *Jama asami* J.
 206. *Eupatorium japonicum*, TH., *Fiodori bana* J.
 207. *Gnaphalium confusum*, D. C., *Hahako gusa* J.
 208. G. *Japonicum*, TH., *Tsitsi kokusa* J.
 *209. *Lappa edulis*. SIEB., *Kobo* J. *Setakorokoni*, the root
 210. L.? *Sikibejoro*, A., *Jama kobo*? J.
 211. *Ligularia Kaempferi*, s. & z., *Tsuwa fugi* J., *Oinamats*'.
 212. *Mulgedium*? *Wacahal*, A., T. V., in insul. Krafto.
 213. *Nardosmia japonica*, s. & z.? *Fuki* J., *Makaje* vel *Korkoni*.
 214. *Saussurea spec.*, *Jezo no azami* J.
 215. *Senecio subensiformis*, D. C., *Sawa oguruma* J.
 216. S.? *Poroja*, A., v. P., in insul. Krafto.
 217. *Taraxacum Deus Leonis*. DESP., *Tan boko* J., *Inemuni*.
 218. *Youngia pygmaea*, LEDEB., *Tsuru nigana* J.
 219. Y. *Thunbergiana*, D. C., *Nigana*. J.

XLIX. Plantagineae.

220. *Plantago major*, L., *Ohodako* J.
 221. P. *Kamtschatica*, LINK., *Jezo obako* J. *Jerumkina*, Pl. *virginica*, A. S.

L. Aristolochiaceae.

222. *Aristolochia debilis*, s. & z., *Mamana suzu*.
 223. *Asarum canadense* L., *Saisin* J.
 224. A. *intermedium*, MEYER.
 225. *Heterotropa asaroides*, M. & D., *Kan afai* J.

LI. Eleagneae.

- 226.
- Eleagnus Sjussimau*
- , A.,
- Guni*
- ? J

LII. Daphnoideae.

- 227.
- Daphne*
- spec. flor. lateral.,
- Oai sibari*
- J.

LIII. Laurineae.

228. *Camphora officinarum*, BAUH., *Kutuno ki* J., *Tsurawon*, (the wood is meant).
229. *Laurinea*, *Binni*, A., *Tamono ki* J.
230. L.? *Tsikizjani*, A., *Aka tamo* J.

LIV. Polygoneae.

- *231. *Pagopyrum tataricum*, GÄRT., *Soba* J.
- *232. *Lapathum*, *Ma daiwō* J. Medicinal.
233. *Polygonum aviculare*, L., *Niwa janagi* J.
- *234. *P. chinense*, L., *Ai* J., blue dye.
235. *P. cuspidatum*, s. & z., var., *Inu itadori* J., *Ikokath* vel *Sikkwa*.
- *236. *Rheum* spec., *Daiwō* J., *Synnaba*. Medicinal.
237. *Rumex crispus*, L.? *Kicigizi* J., *Stakamaro*.

LV. Chenopodeae.

- 238.
- Chenopodium album et rubrum*
- , L.,
- Aka sa*
- J.,
- Sirusikina*
- .

LVI. Salicineae.

239. *Populus Dero*, A.
240. *Salix Sjuzjuzs*, A., *Janagi* J., the bark is called *Meromai* or *Nikanmai*.
241. *S. Tuisjuzs*, A., *Inokoro janagi* J.
242. *S. Toppikara*, A., *Kojanaki* J.

LVII. Canabinae.

- *243. *Canabis cativa*, L., *Asa* J., *Asakara*, for sewing thread.
244. *Humulus japonica*, s. & z., *Kana mugura* J.

LVIII. Urticaceae.

245. *Procris umbellata*, s. & z., *Kutzinawa zjōyo*, J.
- *246. *Urtica Most*, A., *Sromawo*? J., vel *Utarpe*, for staffs.

LIX. Moreae.

247. *Broussonetia?* *Ats'ni*, A., for stuffs.
 *248. *Morus indica*, THE. FLOR., *Kwa J.*, *Tesimani*.

LX. Ulmaceae.

249. *Microptelia parvifolia*, SPACH., *Nire J.*, *Wofsjani*.

LXI. Cupuliferae.

- *250. *Castanea vesca*, GÜRT., *Kuri J.*, *Jam'*.
 251. *Corylus americana*, WALT., *Hasibami J.*, *Wohoba*.
 252. *Fagus Pira*, A., *Banano ki?* J.
 253. *Quercus Beroni*, A., *Nara?* J.
 254. *Q. dentata*, THE., *Kasima J.*, *Gomani*, for oars and other instruments.

LXII. Betulaceae.

255. *Alnus incana*, WILLD., *Hanoki J.*, *Nitats' kene*, generatim *Kene*.
 256. *A. Jaja kene*, A.
 257. *Betula Asada*, A., the bark.
 *258. *B. Beitats'*, A., *Kaba?* J., v. p., the bark.
 259. *B. Sitats?* T. V.

LXIII. Taxineae.

260. *Podocarpus Maki*, s. & z., *Maki J.*, *Tsikuni*.
 261. *Thuja?* *Retinospora?* *Sjungu*, A., *Kara kiba*.
 *262. *Taxus cuspidata*, s. & z., *Araraki J.*, *Tarumani*, for bows.

LXIV. Abietinae.

- *263. *Abies bifida*, s. & z., *Momi J.*, *Sank.*, Timber, masts.
 *264. *A. Jezoensis*, s. & z., *Jezo mats' J.*, *Fuppo*, masts, timber.
 *265. *Larix leptostachys*, s. & z.? *Fusi mats' J.*, timber.
 *266. *Pinus densiflora*, s. & z., *Aka mats' J.*, *Kui*, timber, masts.
 *267. *P. pauciflora*, s. & z., *Gojo mats' J.*, *Tsikafupp*, vel *Inekereni*. for houses, masts.

Monocotyledoneae.

LXV. Typhaceae.

268. *Typha angustifolia*, L., *Gama J.*, *Sikina*.
 269. *Acorus Calamus*, L., *Sjod' J.*, medicinal.

LXVI. Aroideae.

270. *Arisaema japonicum*, BL. VAR., *Tennansjo J.*, *Raurau*.
 271. *A. ringens*, SCHOTT, *Musasi efumi J.*
 272. *Simplocarpus Kamtschaticus*, SALISB., *Usino sta J.*

LXVII. Alismaceae.

- *273. *Sagittaria sagittifolia*, L., var. *angustifolia*, *Womo daka J.*,
 the root.

LXVIII. Orchideae.

274. *Cypripedium virescens*, LINDL., *Jamaran*, var. *Haruran J.*,
Imatsumatts.
 275. *Cypripedium macranthon*, SWARTZ., *Setanoki.*
 276. *Dendrobium catenatum*, LINDL. *Setikok J.*
 277. *Orchis*?, *Likonkamukina.*
 278. *Pelexia falcata*, SPR., *Suzuran J.*
 279. *Pogonia ophioglossoides*, KERR.? *Tokiso J.*

LXIX. Irideae.

280. *Iris japonica*, THB., *Sjaka J.*
 281. *I. Kaempferi*, SIEB., *Kakitsubata J.*, *Sitan.*
 282. *I. oxypetala*, DC. ? *Fimesjaka J.*
 283. *I. sibirica*, L., *Ajame J.*
 284. *I. uniflora*, PALL., *Jama ajame J.*

LXX. Dioscorideae.

285. *Dioscorea heterophilla*, SIEB., *Tokoro J.*
 *286. *D. opposita*, TH., *Naga imo J.*, *Tjurip* vel *Wonkotsuide* vel
Kosa, the root.
 *287. *D. sativa*, L., *Kazjuimó J.*, the root.

LXXI. Smilacaceae.

288. *Convallaria majalis*, L., var. *fol. latior.*, *Kimikakeso J.* *Setakito.*
 289. *Paris quadrifolia*, L., *Tzume tori gusa J.*
 *290. *Polygonatum japonicum*, M. & DECAIS., *Amatokoro J.*, the root.
 291. *P. Isni*, A.
 292. *P. latifolium*, DESP.? *Bebeakkina.*
 293. *Smilacine bifolia*, DESP., *Maidsur J.*
 294. *S. racemosa* DESP., var. *Jezoënsis*, SIEB., *Juisata.*
 295. *S.*? *Firajoma*, A. v. p.

- 296—97. *Smilax* spec. Q. inermes.
 298. *Trillium grandiflorum*, SALISB., *Mikadosó J.*, *Herosara*, T. V.,
 Sp. aff. *obovatum*; PURSH.

LXXII. Liliaceae.

- *299. *Allium sativum*, L., *Ninnik'?* J. *Fuksa*.
 *300. *Allium aliginosum* DON., *Nira J.*, *Heroni*.
 301.—2. *A. spec. indeterminatae*.
 303. *Crinum maritimum*, SIEB.? *Haua juri J.*, *Imakibar*.
 304. *Erythronium Dens canis*, *Katakuri J.*, *Kiktori*.
 305. *Fritillaria ruthenica*, WIET., *Haru juri J.*
 306. *Funkia undulata*, SIEB., *Susi gibosi J.*
 307. *Gagea lutea*, KUNTH., *Amana J.*, *Tsikappoma*.
 308. *Hemerocallis sieboldii*, KIKS., *Kisuge J.*
 309. *Lilium canadense*, L.? *Kuruma juri i. e. fol. verticillat. J.*,
Binnera vel *Imakiane*.
 310. *L. Partheneion*, SIEB. & VRIES *Fime juri J.*
 311. *L.?* *Baba juri?* J., *Thurep*.
 312. *Narcissus tazetta*, L., *Suizen J.*
 313. *Ornithogalum*; species *indeterminata*.
 314. *Sarana kamtschatica*, WISCH., *Kuro juri J.*, *Aurokol* vel
Sirakor', Har?
 315. *Scilla japonica*, THB., *Seozo fakama J.*

LXXIII. Melanthaceae.

316. *Uvularia sessilifolia*, L., *Hótsjak' J.*

LXXIV. Junceae.

317. *Juncus*, spec.
 318. *Luzula campestris*, DESV., *Suzumeno juri J.*, *Ritenmuni*.

LXXV. Cyperaceae.

319. *Carex variegata*, STEB. & DE VRIES, *Suge? J.* *Hirasinekira*.
 320. *C. Tsimo*, J, *Irrap*.
 *321. *Scirpus maritimus*, L., *Kasasuge J.* for straw hats.

LXXVI. Gramineae.

322. *Airoclytrum japonicum*, STEUD., *Sasakusa J.*
 323. *Andropogon spec.*, *Kaze gusa? J.* *Nino*.
 324. *Authistriria japonica*, WILLD., *Karukaja J.*, T. V., *Um*.

325. *Arundo nitida*, K. & B.? *Josi J.*, *Sjakki*.
 326. *A. Sijariki*, A., T. V.
 327. *Bambusa sive Arundinaria*, *Take J.*, *Top? Kurbe*.
 328. *Calamagrostis? Mari*, A., ad littus maris in insul. *Krafto*.
 *329. *Eleusine coracana vel indica*, AUTOR, *Fiju J.*, *Aira sjajam? vel Bijaba*.
 330. *Erianthus spec.*, *Kaja? J.*, *Um*.
 331. *Festuca spec.*, *Talsnofge J*.
 *332. *Hordeum vulgare*, L., *Mugi J.*, *Menkuro*.
 333. *H. jubatum*, L., haud dubie hoc referendum.
 334. *Imperata pedicellata*, STEUD., *Trigaja J.*, *Nupkausi*.
 335. *Melica*, Sp. aff. *M. mutica*, WALT.
 *336. *Oriza sativa*, L., *Kome J.*, *Tsimorimokitsubi*, seldom ripens on *Jezo*.
 *337. *Panicum italicum et miliaceum*, L., *Awa*, *Kibi J.*, *Musiro*; quoque *Kitenamam*, *Sipsike*.
 338. *Phalaris spec.* (panic ovoidea pendula), for roofs.
 339. *Phyllostachys?*, *Sasa? J.*, *Ikitara*.
 340. *Graminea*, *Izjo*, A., *Jania gusa*, i. e. Mountain grass, J.
 *341. *G. Untsja*, A., *Makomo J.*, edible.
 342. *G. Siki*, A., *Onikaja? J*.

Acotyledoneae.

LXXVII. Equisetaceae.

343. *Equisetum*, *Tok'za J.* *Sibisibi*.

LXXVIII. Filices.

- *344. *Filix*, *Pteris?*, *Warabi J.*, *Toha*, edible.
 345. *F. Warabi J.*, *Sefumakina*.

LXXIX. Musci.

- *346. *Musci*, *Koke J.*, *Ikkimaimai*, edible moss.
 347. *M.*, *Koke J.*, *Farkama*.

LXXX. Fungi.

- *348. *Agaricus Eburico*, A., (on *Larix leptost.*) Medicinal.
 *349. *Boletus Kuruma*, A., (on *Quercus Beroni.*), edible.
 350. *Fungus? Take J.*, *Karusi*.

351. F.? *Take J.*, *Kappara*.

352. F.? *Mai take J.*, *Juk karusi*, i. e. Fung. cervi.

LXXXI. Algae.

*353. *Fucus esculentus* LIN. *Kombô Jap.*, *Konfu*. †

354—56. *F. siliquosus*, *F. perforatus*, *F. graminoides*. Ab ill. a.
LANGSDORFF. observatae species.

357. Alga?, *Wakame J.*, *Ikkekonfu*, i. e. *F. muscosus*.

MINERALS.

An orographic description of the island of *Jezo* and of the series of volcanoes which stretch from the S. to the N. of *Japan*, thence over *Jezo* up to the *Kurils*, and further to the peninsula of *Kamtschatka*, we have already given in another place. * We can give nothing relative to the geological condition of the *Aino* lands but a few observations in the immediate neighbourhood of *Hakodate*, by Dr. GREEN, member of the American expedition. These observations are confined to a superficial description of a reddish variety of Sienite remarkable as being mixed up with a very large quantity of Turmalin crystals, of which the top of the mountain in the immediate vicinity of *Hakodate* consists, and to some observations on the promontory (forming the bay?), of elevations from subterranean forces and of the throwing up of a stone similar to the above-mentioned Sienite, which however was mixed with

† This edible seaweed, which as above said, forms a considerable article of Japanese exports, is of a peculiarly good quality in the south east and east of *Jezo*. The *Aino* women are employed in fishing up and drying this vegetable, as also in that of tripang and remora.

* *Geschichte der Entdeckungen* l. c., page 137. ALEXANDER VON HUMBOLDT, *Kosmos*. Band IV, Abth. I.

Feldspar instead of Turmalin, and was recognised by Dr. GREEN as a Porphyry formation *. In the same way as *Kamtschatka*, the geological condition of which is now accurately known, the island of *Jezo* seems to owe its present form to several eruptions, the first of which seem to have followed each other at great intervals. First appeared Granite and Porphyry, and these two occasioned the first rising and revolution of the firm slatestone. After a long rest, during which latter period the tertiary strata were formed, Basalt and Almondstone broke through and exercised a revolutionising influence on the new sediment stone. Afterwards, at short intervals, there followed powerful eruptions of trachitic and old volcanic stones, which mixed up and revolutionised the existing stones, till at last the then yet active volcanoes opened a way through the already existing confusion of old craters, and continually produced new revolutions and formations of the land. Such a scene of destruction and re-creation, by subterranean powers, is offered by the whole chain of volcanoes which spread over the *Aino* lands, from the south of *Japan* up to *Kamtschatka*, where, as the last researches have shown, it is still active from seventeen craters.

Among the collections of scarce stones from *Jezo* which we have received from Japanese, there are such granite and porphyry stones and several crystalised sorts of Quartz, among which beautiful crystals of black Smoke-topaz, Amethyst and Rock-crystal. We have also received thence, Obsidion balls of from two feet to two feet and a half in diameter, coalblack of colour

* FRANCIS L. HAWES, *Narrative*, l. c. page 518.

and some small blue pieces, of stone of which probably the so-called *Krafto tama*, or precious stone of *Krafto* is formed. As a peculiar curiosity they sent us from *Matsmaë* octangular columns of more than a yard long and four inches thick, which had been found on the mountain tops, or the banks of the *Isikari*.

Such isolated stones are however only to be regarded as curiosities, and suppose the existence of primitive volcanic mountains, still active or extinguished, rich in ore; — for forming an opinion of the geological condition of these regions they are of no importance. We subjoin a list of the names of ores and some other minerals:

Gold.	<i>Koukani</i> (Aino).	<i>Kane, Kin</i> (Jap.)
Silver.	<i>Sirokani</i> .	<i>Sirokane, gin.</i>
Copper.	<i>Akkane, furesju.</i>	<i>Akakane.</i>
Bronze.	<i>Karakane.</i>	<i>Karakane.</i>
Iron.	<i>Kup'ka.</i>	<i>Kurogane, tets.</i>
Arsenic.	<i>Kabuto.</i>	<i>Kawano sômyo.</i>
Amber.	<i>Rukke.</i>	<i>Kwarjô.</i>
Whetstone.	<i>Rui.</i>	<i>Tvisi.</i>
Stone.	<i>Furima, tjuma.</i>	<i>Iti.</i>

The interior of *Jezo* is said to be rich in ore, and the sand of several rivers and of the sea shore contains gold. It will therefore not be unimportant to conclude our treatise with an historical review of the accounts, from Japanese sources, relative to the gold and silver riches of that island. The principal object of the voyages undertaken by the commanders Quast and Vries was the discovery of islands producing gold and silver, and that Vries attained the object of his search is evident since on the island of *Urup* or *Compagnie-*

land, its new possessors the Russians have opened rich copper-mines. All the Japanese travellers on *Jezo* also assure us of the existence of precious metals there.

"*Jezo*," says Fajasi Sifei," is rich in ore; the natives however have no knowledge of mining and so do not know how to procure the precious metals." Gold-sand is found in many places on *Jezo*, as: near *Kunsui*, to the N. W. of Volcano bay; on the strand of *Usibets* to the W. of *Cape Jerimo*; in the mountains of *Jubari* and *Sen ken gak* which are called the Gold-mountains (*Kinsan*); at *Sikots* not far from the extensive lake whence rises the *Isikari*, the largest river of *Jezo*; and at *Haboro* on the N. W. coast. Gold-sand is not only washed up by the rivers, but often also found spread over regions of from 10 to 20 *Ri*. At *Haboro* gold-sand is found whenever the wind is N. W., and if it has blown hard the strand glitters as if it were gilded. The old Dutch navigators also heard, while at their anchor place at Vossen-Island (on *Kunasiri*), that gold was to be found in the neighbourhood of *Peak Antony*, and that the silver for earrings was obtained from the *Minami sjam*, i. e. Southmen (*Jeroeze*). "These people cared little for silver" says the Mate Bukker. The same authority thus describes the ore found on the *Mineraelbergk* on the Compagnie-land (*Urup*): "Stony earth, much like white fullers earth, which, when often washed, gave pieces of metal like pin's heads, which they were of opinion were silver." Sifei complains much that the Japanese neglect the collecting of the gold-sand, pretending that the mountaineers could not support the cold there; "if however as he observes" the natives of the north

of *Haboro* enjoyed their health, so could people from warmer countries if they only dressed warm and fed themselves well." There is however another cause which keeps the Japanese from looking for gold. The working of gold mines and the washing of gold-sand are privileges wholly and solely reserved to the *Sjógum*, the so called temporal emperor, and from political reasons severely forbidden. Formerly, in the middle of the 17th cent., much gold and silver was gathered in the Volcano-bay near the river *Kunni* and on the east coast on the *Sarni*, and there was much trade there between the *Ainoes* and the Japanese. At that time however a famous *Aino* chief, *Samsaün* raised a rebellion which was put down by force of arms, on which the search for gold was limited and gradually forbidden. In the *Baie de Langle*, on the West coast of *Krafto*, *Lapérouse* found pieces of coal on the strand, but no kinds of stones in which they could discover traces of gold, copper or other ore. In later times coals have been found on *Jezo* of very good quality. The prince governor of *Matsmaë* had however in 1856 not yet obtained permission from the court of *Jedo* to work the coal mines. The report of the voyage of Capt. *FABIUS* to the harbours of *Hakotade* and *Simoda* with the Dutch screw corvet *Medusa* in September and October 1856, also confirms the account of the island of *Jezo* being very rich in silver and copper mines, and that the mines may not be worked*.

* *Rapport der Departementen van Kolonien en Buitenlandsche Zaken d. d. 19 April en 6 Mei 1857, betreffende de Japansche aangelegenheden.*

In our geographical elucidations we have cited the observations of Vries and the old Dutch navigators respecting the position of the most important points and places on the east coast of *Jezo*, the south *Kurils* and from the *Gulf of Aniwa* to the *Bay of Patientie* on *Krafto*, and have compared them with those of the Court-astronomer at *Jedo* and of other navigators. A comparative table of these observations will not be out of place here, and to increase its practical utility we will add the latitude and longitude of all the other points and places of *Jezo*, *Krafto* and the south *Kurils* as far as they are known.

Comparative Table of the Latitude and Longitude of the principal points and places of Jezo, the south Kurils and of Krafto.

Names of the Points.	N. Lat.	Long E. of Green.	Observers.
THE ISLAND OF JEZO.			
Matsmaë town	41° 28' 30"	140° 26' 40"	T. Sakusajemon.
	41 30 —	140 4 —	Von Krusenstern.
Cape Tadeise (<i>C. Matsmaë</i> , VON KRUSENSTERN)	41 30 —	139 57 —	"
C. Sirakami (<i>C. Nodijida</i>)	41 25 10	140 9 30	"
C. Kinoko (<i>C. Smeke</i> , VON KRUSENSTERN)	41 39 30	139 54 15	"
	41 38 —	130 13 40	T. Sakusajemon's map.
C. Ohota (<i>C. Oota</i> , VON KRUSENSTERN)	42 18 10	139 46 —	Von Krusenstern.
	42 22 —	140 1 40	T. Sakusajemon's map
C. Sepomai (<i>C. Koutousoff</i> , KRUS.)	42 38 —	140 1 —	Von Krusenstern.

Names of the points.	N. Lat.	Long E. of Green.	Observers.
C. Raiten	42° 57'	—° 140° 16' —"	Von Krusenstern.
C. Okamui (<i>C. Novosiloff</i> , KRUS.).....	43 14 30	140 15 30	"
	43 15 —	140 34 40	T. Sakusajemon, map.
C. Wofui (<i>C. Malespina</i> , KRUS.).....	43 42 15	141 18 30	Von Krusenstern.
	43 36 —	141 41 40	T. Sakusajemon, map.
Mount Pallas, KRUSENST. (<i>Manke, Jap.</i>).....	44 — —	141 54 —	Von Krusenstern.
C. Tomamai (<i>C. Schisch- koff, v. KRUS.</i>).....	44 20 —	141 37 —	"
	44 20 30	142 9 —	T. Sakusajemon, map.
C. Nosjab' (<i>C. Romon- soff, KRUS.</i>).....	45 25 50	141 34 20	Von Krusenstern.
	45 27 —	142 28 —	T. Sakusajemon, map
C. Soja	45 31 15	141 51 —	Von Krusenstern.
Village Soja	45 28 —	142 49 9	T. Sakusajemon.
C. Schaep, KRUS. (<i>Ka- mui-iroka</i> ?)	45 21 —	142 14 —	Von Krusenst., map.
C. Kamui-iroka.....	45 5 —	143 41 —	T. Sakusajemon, "
The bay of Sjarurun ...	44 24 —	144 2 —	" "
Jubets (mouth of the river	44 9 —	144 34 —	" "
C. Notoro	44 3 —	145 19 —	" "
C. Siretoko (<i>C. Spanberg</i> , KRUS.).....	44 14 —	146 19 —	" "
Nisibets (mouth of the river.....	43 23 —	146 4 47	Sakusajemon.
C. Notke (<i>Notsky, LAX- MANN.</i>).....	43 28 —	146 4 —	"
	43 45 —	146 52 —	Von Krusenstern.
C. Nosjam (<i>C. Brough- ton, KRUS.</i>).....	43 28 —	146 44 27	T. Sakusajemon map.
	43 27 —	146 44 27	Broughton, original map.
	43 38 30	146 7 30	Von Krusenst., map.
C. de Manshooft, VRIES.	43 11 —	146 14 —	T. Sakusajemon map.
	43 16 —	— — —	Vries, log.

Names of the points.	N. Lat.	Long E. of Green.	Observers.
<i>Atkesi (Bay de Goede</i>			
<i>Hoop, VRIES)</i>	43° 2' —	145° 34' 27"	T. Sakusajemon.
<i>" the Village.</i>	43 20 —	— — —	Vries, map.
Entrance of the Bay.	43 — —	144 36 —	Broughton, or. map.
	42 58 —	144 22 —	Von Krusenstern.
	43 — —	144 36 —	Broughton or. map.
	43 5 —	— — —	Vries.
C. Kusuri.	42 56 —	145 8 —	T. Sakusajemon map.
Tokatsi (a village at the			
mouth of the Usibets').	42 39 —	144 22 —	T. Sakusajemon map.
Saruru (village).	42 7 —	143 56 6	T. Sakusajemon.
C. Jerimo (<i>Eroem, VRIES</i>)	41 56 —	143 39 10	T. Sakusajemon map.
	42 — —	— — —	Vries.
	41 53 —	142 55 —	Broughton, or. map.
	41 59 —	142 48 —	Ricord.
C. Jetomo (<i>Endermo,</i>			
<i>BROUGHT</i>)	42 20 —	141 12 —	T. Sakusajemon map.
	42 19 30	141 7 —	Broughton.
	42 21 15	140 56 —	Ricord.
C. Jesan (<i>Esarme,</i>			
<i>BROUGHT</i>)	41 46 —	141 35 40	T. Sakusajemon map.
	41 49 20	141 20 —	Broughton.
	41 48 —	141 13 —	Ricord.
Hakodate (town and har-			
bour)	41 47 —	141 5 —	T. Sakusajemon map,
" (mouth of the <i>Ka-</i>			
<i>mida</i>).	41 49 —	140 47 45	Americ. Exped.
	41 48 30	— — —	Broughton.
	41 42 —	140 48 —	Von Krusenstern, ac-
			ording to Ricord.
ADJACENT ISLANDS.			
J. Kosima	41 20 —	139 55 —	T. Sakusajemon map.
	41 21 30	139 46 —	Von Krusenstern.
J. Ohosima	41 30 —	139 29 —	T. Sakusajemon map.
	41 31 30	139 19 15	Von Krusenstern.
J. Okosiri	42 18 30	139 42 40	T. Sakusajemon map.
	42 9 —	139 30 —	Von Krusenstern.

182 LAT. AND LONG. OF POINTS ON THE KURILS.

Names of the points.	N. Lat.	Long E. of Green.	Observers.
J. Teore.	44° 27' 30"	141° 46' —	T. Sakusajemon map.
	44 27 45	141 16 45	Von Krusenstern.
J. Jankesiri.	44 29 —	141 52 40	T. Sakusajemon map.
	44 29 45	141 23 15	Von Krusenstern.
J. Risiri (<i>Pic de Langle</i>).	45 11 —	141 45 —	T. Sakusajemon map.
	45 11 —	141 12 15	Von Krusenstern.
J. Refansiri.	45 18 —	141 35 40	T. Sakusajemon map.
C. Guibert.	45 27 45	141 4 —	Von Krusenstern.

THE JAPAN KURILS.

Kunashiri (<i>Kunashir</i> , KRUSENSTERN).	44 26 —	146 12 —	T. Sakusajemon map.
	44 29 15	146 8 —	Golownin (1813). . .
- C. Moimoto (<i>C. Loff-</i> <i>soff</i> , KRUSENST.)	44 24 24	146 23 —	Broughton, or. map.
	44 21 —	146 54 —	T. Sakusajemon map.
- Peak Antony, VRIES.	44 31 —	145 46 —	Golownin (1818) and Ricord.
	44 20 —	146 6 —	Broughton, or. map.
- W. Point of the Te- pelberg.	44 36 —	— — —	Vries, Log.
- Baie des Traitres	43 36 —	146 17 —	T. Sakusajemon map.
	43 44 —	144 59 30	Golownin.
- Mount Tsinsi.	43 54 —	146 26 —	T. Sakusajemon map.
Jetorop (<i>Hurop</i> , KRUS., <i>Staten Eylant</i> , VRIES).	44 23 —	146 24 —	" "
- C. Tesiko (<i>C. Ricord</i> , KRUS.).	44 29 —	146 34 —	Golownin and Ri- cord.
	44 21 —	146 48 —	Broughton, or. map.
	44 28 —	— — —	Vries, Log.
- C. Kroonberg, VRIES.	44 51 —	147 34 —	T. Sakusajemon map.
	44 45 —	146 52 —	Broughton, or. map.
	45 5 —	— — —	Vries (<i>Jansson's</i> ")
- C. Notaro (<i>Low point</i> , BROUGHTON).	45 7 —	147 17 —	Broughton, or. map.

LAT. AND LONG. OF POINTS ON THE KURILS. 183

Names of the points.	N. Lat.	Long E. of Green.	Observers.
* C. Iksbanots (<i>de Trou</i> ,	45° 33' —"	143° 14' —"	T. Sakusajemon map.
VRIES)	45 34 —	— — —	Vries, Log.
	45 39 —	— — —	De Lapérouse.
* C. Tosifuri, (N. W.			
point)	45 40 30	148 53 —	T. Sakusajemon map.
	45 43 —	148 18 —	Broughton, or. map.
	45 46 —	— — —	Vries (Janss. map.)
	45 37 —	149 1 —	Golownin.
* C. Okkebets.	45 39 —	149 9 —	T. Sakusajemon map.
	45 45 —	148 28 —	Broughton, or. map.
	45 59 —	148 20 24	De Lapérouse, map.
* C. Okkebets.	45 50 —	— — —	Vries (Janss. map.)
* C. Seworosi (<i>C. Vries</i> ,			
VRIES)	45 30 —	149 10 —	T. Sakusajemon map.
	45 35 —	148 27 —	Broughton, or. map.
	45 38 —	— — —	Vries (Janss. map.)
	45 33 30	149 14 —	Golownin.
	45 35 —	— — —	Vries, Log.
Urup (<i>Compagnie-land</i>).	45 44 —	149 — —	T. Sakusajemon map.
* C. Nobunots.	45 46 —	148 58 —	Broughton, or. map.
* C. Kusinots (<i>C. van</i>			
<i>der Lijn</i> , VRIES)..	45 45 —	149 49 —	T. Sakusajemon map.
	45 38 —	— — —	Vries.
* C. Iwara (<i>Kruishoek</i> ,			
VRIES)	45 39 —	149 34 —	Golownin.
	45 53 —	149 43 —	T. Sakusajemon map.
	45 57 —	149 7 —	Broughton, or. map.
	46 6 —	149 48 —	Vries, Log.
	46 6 —	150 42 24	De Lapérouse, map.
* C. Arimui (<i>C. Sohou-</i>			
<i>ten</i> , VRIES)	45 59 —	149 57 —	T. Sakusajemon map.
	46 8 —	149 20 —	Broughton, or. map.
	46 33 —	— — —	Vries (Janss. map.)
* C. Itojentomo (<i>C. Cas-</i>			
<i>trienm</i> , LAPÉROUSE)	46 18 —	150 29 —	T. Sakusajemon map.
	46 16 —	150 22 —	Golownin.
	46 14 —	149 52 —	Broughton, or. map.
	46 23 —	151 48 24	De Lapérouse, map.

Names of the points.	N. Lat.	Long E. of Green.	Observers.
* Rebuntsiriboi (<i>Tschiripoi</i>).....	46 27 —	150 44 —	T. Sakusajemon map.
- (Hummock Island, BROUGHTON).....	46 32 45	150 37 10	Golownin.
	46 32 —	150 10 —	Broughton, or. map.
Jargetsiriboi.....	46 24 —	150 39 —	T. Sakusajemon map.
	46 29 15	150 33 30	Golownin.
	46 29 —	150 7 —	Broughton, or. map.
Makanruru (<i>J. Broughton</i> , <i>ton</i> , GOLOWNIN).....	46 37 —	150 41 —	T. Sakusajemon map.
(Round Island BROUGHTON).	46 42 30	150 28 30	Golownin.
	46 46 —	149 59 —	Broughton, or. map.
Sikotan (<i>Tschikotan</i> , <i>J. SPANGBERG</i>)....	43 58 —	137 23 —	T. Sakusajemon map.
* C. Itoruika (<i>C. Canael</i> <i>VRIES</i>).....	43 53 —	146 48 30	Golownin.
	43 44 —	146 52 —	Broughton, or. map.
	44 7 —	— — —	Vries (Janss. map.)
	43 50 —	— — —	Spangberg.
	43 56 —	— — —	Vries, Log.

THE ISLAND OF
KRAFTO, GULF OF
ANIWA.

C. Notoro (<i>C. Crillon</i> , LAPÉROUSE).....	45 57 —	140 34 —	(rouse. E. of Paris) De Lapé- Von Krusenstern.
	45 54 15	141 48 —	
I. La Dangereuse, LAPÉR.	45 47 15	142 8 45	"
C. Siretoko (<i>C. Aniwa</i> , VRIES).....	46 3 —	144 24 —	De Lapérouse.
	46 2 20	143 30 20	Von Krusenstern.
	45 59 —	— — —	Vries (Janss. Log.)
Zalmbani, VRIES.....	46 40 —	— — —	" " "
* V. KRUS., Anchorage.	46 41 15	142 33 —	Von Krusenstern.
Tomari Aniwa, VRIES...	46 36 20	142 52 —	"
I. Pyramida (<i>Takatsuga</i> , VRIES).....	46 20 —	— — —	Vries, orig. map.
	46 32 —	— — —	Tokuai's map.

Names of the points.	N. Lat.	Long E. of Green.	Observers.
WEST COAST OF KRAFTO.			
I. Toto-mosiri (<i>I. Monneron</i> , LAPÉROUSE).....	46° 9' —"	141° 14' —"	According to Krus., Mémoires hydrog.
Baie de Langle, LAPÉROUSE	47 49 —	140 29 —	(E. of Paris) De Lapér.
	47 45 —	141 58 —	v. Krus. Mém. hydr.
Pic de Lamanon (<i>Rait-siska</i>)	48 45 —	141 56 —	" " "
Baie d'Estaing, LAPÉROUSE	48 59 —	140 32 —	(E. of Paris) De Lapér.
" de Jonquière, LAPÉROUSE	50 54 —	142 16 —	Von Krusenstern.
C. Boutin (<i>Tekka</i> , LAPÉROUSE).....	51 52 —	141 53 —	Mémoires of "
NORTH COAST OF KRAFTO.			
C. Golowatcheff, v. KRUS.	53 30 15	141 55 —	Von Krusenstern.
C. Horner, VON KRUS. ...	54 8 —	142 28 —	"
C. Marie, " ...	54 17 20	143 17 45	"
C. Elisabeth, " ...	54 24 30	142 46 30	"
EAST COAST OF KRAFTO.			
C. Loewenstern, v. KRUS.	54 3 15	143 42 30	"
C. Würost, VON KRUS. ...	52 27 30	143 17 30	"
C. de Bas-fonds, v. KRUS.	52 32 30	143 14 30	"
Pointe de dunes, " ...	51 53 —	143 14 —	"
C. Delisle de la Croycere, VON KRUSENSTERN ...	51 30 —	143 33 —	"
C. Rotmanoff, VON KRUS.	50 48 30	143 53 15	"
C. Rimnick, " ...	50 11 30	144 3 —	"
C. Bellinghausen, " ...	49 35 —	144 25 45	"
C. Patientie, VRIES.	48 34 —	— — —	Vries, Log.
	48 52 —	144 46 15	Von Krusenstern.
Robben Eyland, VRIES ..	48 34 —	144 25 —	"
	48 31 —	— — —	Vries, Log.

Names of the points.	N. Lat.	Long E. of Green.	Observers.
C. Dalrymple, VON KRUS- SENSTERN (<i>Ūra</i>).....	48° 21' —"	142° 50' —"	Von Krusenstern.
C. Malloffsky, VON KRUS. (<i>Sjojunkotan</i>).....	47 57 45	142 44 —	"
C. Seniawin, VON KRUS. (<i>Notsuitoko</i>).....	47 16 30	143 — —	"
Mordwinoff bay, V. KRUS.	46 48 —	143 24 —	"
C. Tonijn, VRIES (<i>Wojakutsi</i>).....	46 50 —	143 33 —	"
	46 47 —	— — —	Vries, Log.
C. Löwenörn, VON KRUS. (<i>Hontob</i>).....	46 23 10	143 40 20	Von Krusenstern.

VOYAGE
of Commandeur
MARTIN GERRITSE VRIES,
Commandeur of the Ship CLYDESTER
A.D. 1642.

From the original charts in the Museum
of the Netherlands.

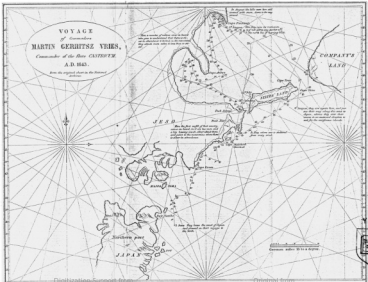
When several degrees more to the East
 are gone, a small part of the Continent
 will be discovered, but the distance
 by which this will be to be proved.

A degree to the East, and the
 Continent will be discovered
 by which this will be to be proved.

The further South of this country
 the more will be discovered
 by which this will be to be proved.

It is here, that some of the
 most valuable discoveries
 will be made.

When the sea is calm, they will
 see the land, and the
 mountains, and the
 hills, and the valleys.





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GEOGRAPHICAL AND ETHNOGRAPHICAL

ELUCIDATIONS

TO THE DISCOVERIES OF

AERTEN GERRITS VRIES

Commander of the fleet Castricum

A. D. 1643.

IN THE EAST AND NORTH OF JAPAN;

TO SERVE AS

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OF THE EAST COAST OF JAPAN, AND TO JEZO, KRATTO, AND THE KURILS.

BY

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TRANSLATED FROM THE DUTCH

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